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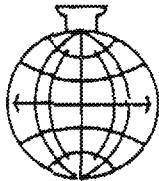
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and Development Corporation

MATTAWAN, MICHIGAN, U.S.A. 49111 TELEPHONE 666-3136

SPONSOR: Velsicol Chemical Corporation

TEST ARTICLE: Dicamba

SUBJECT: 13-Week Dietary Toxicity Study in Rats
With Dicamba

DATE OF SUBMISSION: November 11, 1980

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I. QUALITY ASSURANCE STATEMENT

Study Title: 13-Week Dietary Toxicity Study in Rats with Dicamba

Test Article: Dicamba

The conduct of this study has been subjected to periodic inspections. The dates of inspection and the dates that findings were reported to management and the Study Director are listed in Appendix I.

This report has been reviewed by the International Research and Development Corporation Quality Assurance Department in accordance with the United States Food and Drug Administration's Good Laboratory Practice Regulations of June 20, 1979.

Approved And
Submitted By:

Barry W. Benson
Barry W. Benson, B.S.
Director of Quality Assurance

Date

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III. SYNOPSIS

Dicamba was fed in the diet to . . . River CD® rats at dosage levels of 1000, 5000 and 10,000 ppm in a 13-week dietary toxicity study. Twenty male and 20 female rats were initiated in each of the dosage levels and in a control group. The rats were observed twice daily for signs of overt toxicity, moribundity and mortality. Individual body weights and food consumption values were recorded weekly. Clinical laboratory tests were conducted prior to study initiation and at 6 and 13 weeks of study.

No changes in general behavior and appearance considered to be related to compound were seen. Three female rats (one control, one mid- and one high-dose) died on study. Body weight means for the 10,000-ppm dosage level male and female rats were decreased slightly when compared with control mean values. Decreases in food consumption values were noted for male and female rats at the 10,000-ppm dosage level.

At the termination of the 13 week study period, all survivors were sacrificed and necropsied. All rats that died during the study also were necropsied. No gross lesions of treatment related significance were evident in this study. The statistically significant organ weight variations which occurred in the study, did not have a specific treatment related significance. Histologically, there was an absence or reduction of cytoplasmic vacuolation of hepatocytes in the high-dose groups, representing reduced glycogen storage in the liver. All other microscopic changes were considered spontaneous lesions and unrelated to the test article.

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III. INTRODUCTION**A. OBJECTIVE**

The objective of this study was to evaluate the possible toxic effects of the test article when administered to rats for 13 weeks, in accordance with Section 163.82-1 of the Environmental Protection Agency Proposed Guidelines for Registering Pesticides in the U.S., Hazard Evaluation: Human and Domestic Animals (Federal Register, 43, pages 37363-37366, August 22, 1978).

B. SPECIES SELECTION

The Charles River CD® rat was chosen because this strain of rat has been shown to be sensitive to the toxic effects of a variety of chemicals and it has been used extensively.

C. JUSTIFICATION FOR ROUTE OF ADMINISTRATION

The dietary route of administration was selected since this is the expected route for human exposure.

D. TEST ARTICLE

The test article was received from Velsicol Chemical Corporation, Chicago, Illinois as follows:

Date	Label	Description
November 5, 1979	Tech. Ref. Std. Dicamba 86.82% (GC) Lot No. 52625110	beige chips

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IV. MATERIALS AND METHODS

This study was conducted in accordance with the standard operating procedures of the International Research and Development Corporation (IRDC), and the protocol as specified by the sponsor. Procedures pertinent to this study are described herein.

A. EXPERIMENTAL DESIGN

One hundred twenty one male and 121 female Charles River CD® weanling rats were received from the Charles River Laboratories, Portage, Michigan on November 30, 1979. After a 2-week conditioning period, 80 male (122 to 164 g) and 80 female (111 to 145 g) rats were initiated in this 13-week dietary toxicity study. Using the randomization procedure described in Section IV. G, the rats were assigned to the following groups:

Group	Dosage Level (ppm)	Number of Animals	
		Male	Female
I	0 (Control)	20	20
II	1000	20	20
III	5000	20	20
IV	10,000	20	20

Rats not selected were appropriately discarded.

The rats were housed individually in suspended wire-mesh cages and maintained in a temperature-, humidity- and light- (12 hours light/12 hours dark) controlled environment. Water and food were available ad libitum. The basal laboratory diet (bld) was Certified Rodent Chow® #5002, Ralston Purina Company. Certification of each lot of diet was performed by Raltech Scientific Services, St. Louis, Missouri. Copies of certifications are maintained in the Archives at IRDC and are available upon request.

Beginning in 1979, the IRDC water supply has been analyzed on a quarterly basis. Samples are analyzed for the presence of heavy metals, pesticides and coliform; the results applicable to this study are maintained in the Archives at IRDC and are available upon request.

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The rats were ear tagged for individual identification. Ear tags were verified after initial tagging, when rats were transferred to clean cages, before and after blood and/or urine collection and at necropsy.

The study was initiated on December 17, 1979 and terminated by sacrifice and necropsy of all surviving animals on March 17 and 18, 1980. Approximately one-half of each group was sacrificed on each day.

B. TEST ARTICLE ADMINISTRATION

Dicamba was offered in the diet at dosage levels of 1000, 5000 and 10,000 ppm. After grinding with a mortar and pestle, the appropriate amount of compound was weighed and mixed with 500 grams of Certified Rodent Chow® #5002 in a Hobart food mixer for 5 minutes. The resulting premix was mixed thoroughly with additional Certified Rodent Chow® #5002 in a twin-shell blender for 30 minutes to attain the appropriate dietary concentration. Control animals were fed Certified Rodent Chow® #5002. Fresh diets were prepared weekly.

C. GENERAL OBSERVATIONS**1. Appearance and Behavior**

The rats were observed twice daily for signs of overt toxicity, mortality and moribundity. Detailed observations were recorded weekly.

2. Mortality

Moribundity and mortality were recorded on the day noted.

3. Body Weights

Individual body weights were recorded weekly.

4. Food Consumption

Individual food consumption values were recorded weekly.

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D. CLINICAL LABORATORY TESTS

Baseline laboratory test values were obtained using 10 male and 10 female rats for urine collection and 10 male and 10 female rats for blood collection prior to study initiation. At 6 and 13 weeks of study, laboratory tests were conducted on 10 rats/sex/group. For each time period rats were selected for these studies according to a computer-generated table of random numbers. Food and water were withheld prior to the collection of blood and urine, before study initiation and at 6 and 13 weeks.

Blood was obtained via puncture of the orbital sinus plexus. Urine was collected overnight in stainless steel metabolism cages.

1. Hematology

Hematologic determinations included: hemoglobin¹, hematocrit¹, erythrocyte count¹, total and differential² leucocyte count¹, platelet count¹, mean corpuscular volume (MCV)¹, mean corpuscular hemoglobin (MCH)¹, mean corpuscular hemoglobin concentration (MCHC)¹, and reticulocyte count².

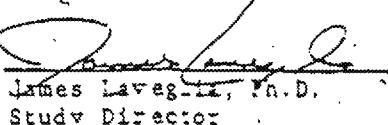
Hematologic determinations were performed on the Ortho ELT-8*, which automatically calculates MCV, MCH and MCHC. For this reason these values have been included in the report.

2. Biochemistry

Biochemical determinations included: sodium³, potassium³, chloride³, serum glutamic oxaloacetic transaminase (SGOT)⁴, serum glutamic pyruvic transaminase (SGPT)⁵, lactic dehydrogenase (LDH)⁶, glucose⁷, blood urea nitrogen (BUN)⁸, creatinine⁹, alkaline phosphatase¹⁰, total protein¹¹, albumin¹², calcium¹³, phosphorus¹⁴, cholesterol¹⁵, globulin, and total bilirubin¹⁶.

Creatinine and phosphorus inadvertently were not analyzed at 6 weeks of study. Serum electrolyte values are obtained by use of the PVA-4. This machine automatically analyzes for sodium, potassium,

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James Laveglie, Ph.D.
Study Director

Date

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D. CLINICAL LABORATORY TESTS

Baseline laboratory test values were obtained using 10 male and 10 female rats for urine collection and 10 male and 10 female rats for blood collection prior to study initiation. At 6 and 13 weeks of study, laboratory tests were conducted on 10 rats/sex/group. For each time period rats were selected for these studies according to a computer-generated table of random numbers. Food and water were withheld prior to the collection of blood and urine at 6 and 13 weeks.

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Creatinine and phosphorus inadvertently were not analyzed at 6 weeks of study. Serum electrolyte values are obtained by use of the PVA-4. This machine automatically analyzes for sodium, potassium, calcium and chloride. For this reason, sodium values have been included in this report. At IRDC direct bilirubin is not determined unless the total bilirubin is greater than 1.0 mg/dl. For this reason, direct bilirubin was not determined.

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calcium and chloride. For this reason, sodium values have been included in this report. At IRDC direct bilirubin is not determined unless the total bilirubin is greater than 1.0 mg/dl. For this reason, direct bilirubin was not determined.

3. Urinalysis

Urinalyses included: specific gravity¹⁷, volume¹⁷, color and appearance¹⁷, microscopic examination of sediment¹⁷, protein¹⁸, pH¹⁸, glucose¹⁸, occult blood¹⁸, nitrites¹⁸, urobilinogen¹⁸, ketones¹⁸ and bilirubin¹⁸.

For many of the urine parameters N-Multistix were used. The N-Multistix was then read by the Clinitek®. Parameters automatically evaluated by this machine included occult blood and nitrites. For this reason these values have been included in the report.

E. PATHOLOGY

1. Gross Pathology

At the termination of the 13-week study period, all surviving rats were sacrificed by decapitation. A complete necropsy examination, supervised by a veterinary pathologist, was done on all sacrificed animals and on animals that died during the study. Gross lesions, if any, were recorded.

2. Organ Weights

During necropsy, fresh organ weights were recorded for the following organs from all the rats sacrificed at the termination of study:

Liver	Testes
Heart	Brain (with brain stem)
Kidney	Ovaries

3. Histopathology

From every necropsied rat, a complete set of the following organs and tissues were collected and preserved in 10% buffered neutral formalin, except the eyes which were preserved in Bouin's fixative:

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James Laveglie, Ph.D.
Study Director1/12/81
Date

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3. Urinalysis

Urinalyses included: specific gravity¹⁷, volume¹⁷, color and appearance¹⁷, microscopic examination of sediment¹⁷, protein¹⁸, pH¹⁸, glucose¹⁸, occult blood¹⁸, nitrites¹⁸, urobilinogen¹⁸, ketones¹⁸ and bilirubin¹⁸.

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all gross lesions	pancreas
adrenals (both)	brain (3 levels - forebrain, midbrain, and hindbrain)
eye	heart
trachea	lungs + mainstem bronchi
esophagus	pituitary
stomach	thyroid and parathyroid
duodenum	thymus
jejunum	lymph node (mesenteric)
ileum	sternum (bone marrow)
caecum	spinal cord
colon	salivary gland (submaxillary)
liver (2 sections)	skeletal muscle (thigh)
spleen	kidneys (both)
urinary bladder	prostate/corpus and cervix uteri
testes/ovaries	peripheral nerve (sciatic)

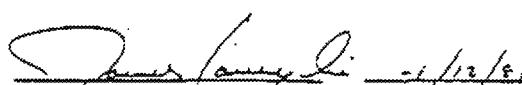
Lungs and urinary bladders were inflated with formalin before placing them in the tissue containers.

Microscopic examination of hematoxylin and eosin stained paraffin sections of the above set of tissues was performed for all the animals in the control group and high dose (10,000 ppm) group. In addition, hematoxylin and eosin stained paraffin sections of kidneys, liver, heart and any other gross lesions were examined for all the animals in the low (1000 ppm) and mid-dose (5000 ppm) groups.

F. STATISTICAL ANALYSIS

All statistical analyses compared the treatment groups with the control group by sex. Body weights (week 13), hematological, biochemical and urinalysis parameters (weeks 6 and 13) and absolute and relative organ weights (terminal sacrifice) were compared by analysis of variance (one-way classification), Bartlett's test for homogeneity of variances and the appropriate t-test (for equal or unequal variances) as described by Steel and Torrie¹⁹ using Dunnett's²⁰ multiple comparison tables to judge significance of differences.

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James Laveglia, Ph.D. Date
Study Director

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all gross lesions	pancreas
adrenals (both)	brain (3 levels - forebrain, midbrain, and hindbrain)
eye	heart
trachea	lungs + mainstem bronchi
esophagus	pituitary
stomach	thyroid and parathyroid
duodenum	thymus
jejunum	lymph node (mesenteric)
ileum	sternum (bone marrow)
caecum	spinal cord
colon	salivary gland (submaxillary)
liver (2 sections)	skeletal muscle (thigh)
spleen	kidneys (both)
urinary bladder	prostate/corpus and cervix uteri
testes/ovaries	peripheral nerve (sciatic)

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G. RANDOMIZATION PROCEDURE

Animal numbers and corresponding body weights were entered onto magnetic tape which was used as the data source for the following randomization procedure. First, the mean body weight and standard deviation was calculated by sex, and a computer-generated edit developed a listing of those animals whose body weights were within ± 1.5 standard deviations of the mean. From the qualifying animals, the randomization procedure selected and assigned the required number of animals. Bartlett's Chi-square test is for homogeneity of variances was applied to the groups. If the groups were not judged to be homogeneous, new randomizations were applied until homogeneity was established.

H. DIET ANALYSIS

Before initiation of the study, test samples of the treated diet were prepared in order to assess the homogeneity of the mixed diets and the stability of the test article in the diet to be used. Batches of test diet (each sufficient for 20 animals) at each of the selected dietary concentrations were mixed in a twin-shell blender according to the procedure outlined in Section IV. B. for 10, 20 and 30 minutes. Duplicate samples of 100 g each were taken from the top, middle and bottom of each diet. Additional duplicate samples were taken from the top and bottom of each of the dietary levels from the 30-minute mixing and were placed in empty animal cages for 7 days and then analyzed in duplicate to verify the stability of the test article in the diet.

A 100 g sample was collected from each treatment group at study week 1, 2, 3, 4, 8 and 13 and analyzed in duplicate for the test article concentration. Analyses were performed at IRDC according to the method described in Appendix II. Additional 100 g samples were collected at the time of preparation and stored frozen at IRDC.

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V. RESULTS

A. GENERAL OBSERVATIONS

1. Appearance and Behavior

No changes were seen in general behavior and appearance that were considered to be related to Dicamba.

Incidental findings noted for treated rats were rales, yellow material on the anogenital region, mouth ulcer, pale exposed skin areas, black material on or around the eye, nose, mouth or anogenital region, corneal opacity, dilated pupil, eye enlarged and protruded, increased distance between pupil and cornea, nose malaligned, swollen foot, portion of the ear missing, and portion of the tail black or missing. These signs were noted randomly among the treated rats. One mid-dose male rat had a subcutaneous mass in the anogenital region.

Incidental findings noted for both control and treated rats were malaligned upper incisors, red areas around the eyes, scabbing, excessive lacrimation and hair loss.

2. Mortality

Three female rats died during the course of the study. The control rat died week 6, after collection of blood. The 5000 ppm rat died week 2 and the 10,000 ppm rat died week 13.

Survival at week 13 was as follows:

Dosage Level (ppm)	Number Surviving/Number Initiated	
	Males	Females
0 (Control)	20/20	19/20
1000	20/20	20/20
5000	20/20	19/20
10,000	20/20	19/20

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V. RESULTS

A. GENERAL OBSERVATIONS

1. Appearance and Behavior

No changes were seen in general behavior and appearance that were considered to be related to Dicamba.

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Dosage Level (ppm)	Number Surviving/Number Initiated	
	Males	Females
0 (Control)	20/20	19/20
1000	20/20	20/20
5000	20/20	19/20
10,000	20/20	19/20

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3. Body Weights (Tables 1-3)

Group mean body weights for the high-dose male and female rats were decreased slightly when compared with the control values. At week 13, the mean body weight for the high-dose males was significantly lower ($p<0.05$) when compared with the control value. Body weight means at week 13 and percent difference from the controls were as follows:

Dosage Level (ppm)	Mean Body Weight g and % Difference from Control			
	Male	% Difference	Female	% Difference
0 (Control)	506	-	284	-
1000	508	+0.4	291	+2.5
5000	487	-3.8	292	+2.8
10,000	468	-7.5	266	-6.3

4. Food and Compound Consumption (Table 4)

Decreases in food consumption values were noted for male and female rats at the 10,000-ppm dosage level. Average food and compound consumption through 13 weeks of study were as follows:

Dosage Level (ppm)	Average Food With Compound Consumption (g/rat/day) and % Difference From Control				Average Compound Consumption mg/kg/day	
	Male	% Difference	Female	% Difference	Male	Female
	25.6	-	18.9	-	-	-
0 (Control)	25.6	-	18.9	-	-	-
1000	26.0	+1.6	19.0	+0.5	69.4	79.5
5000	24.9	-2.7	18.7	-1.1	342	392
10,000	23.2	-9.4	16.8	-11.1	682	751

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B. CLINICAL LABORATORY TESTS (Tables 5-16)

1. Hematology

No changes considered to be related to Dicamba were seen in the hematologic studies. Incidental findings included one female rat at the 10,000-ppm dosage level with slightly elevated total leucocyte, reticulocyte and platelet counts and slightly decreased hemoglobin, hematocrit and erythrocyte count.

2. Biochemistry

Serum alkaline phosphatase (SAP) activity was slightly higher for male and female rats at the 10,000-ppm dosage level at 6 and 13 weeks of study. The group means for SAP activity for the 10,000-ppm dosage level were significantly higher (males p<0.05, females p<0.01) than the control means at both intervals of analysis.

At 13 weeks of study, slightly elevated SGPT activity was noted for 2 males at the 5000-ppm dosage level and for 2 males at the 10,000-ppm dosage level. One additional male at the 10,000-ppm dosage level showed a marked increase in SGPT activity (along with increases in protein, globulin, lactic dehydrogenase and phosphorus). No statistical significance was found for the SGPT values.

Although the individual values were within the normal range, the glucose values for most of the treated females and for males at the 5000- and 10,000-ppm dosage levels were lower than those of control rats. The group mean glucose values were statistically significantly lower when compared to the control group means for females at the 5000- and 10,000-ppm dosage levels at 6 weeks and for females at all of the treated dosage levels at 13 weeks, and for males at the 10,000-ppm dosage level at 6 and 13 weeks of study.

No other noteworthy differences in the biochemical studies were seen between control and treated rats.

3. Urinalysis

No changes considered to be related to compound were seen in the urinalysis studies.

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C. PATHOLOGY RESULTS

1. Gross Pathology (Table 17, 20 and 21)

No gross lesions of treatment related significance were seen in this study. The few gross lesions observed showed a sporadic incidence in treated and control animals. Such gross lesions are not uncommon in untreated rats of this age group. Based on the nature of the lesion and the incidence pattern, all the gross lesions observed in this study were considered as spontaneous lesions, unrelated to the administration of the test article.

2. Organ Weights (Tables 22-23)

Some statistically significant organ weight variations occurred in this study but none of these had a specific treatment related significance. The organ weight variations observed were as follows:

The females showed increased relative liver and kidney weights at the 10,000 and 1000 ppm dosage levels, respectively. No corresponding absolute weight alteration was seen in these organs and hence these weight variations were considered as a reflection of the lowered body weights seen in these groups of rats. The males at the 10,000 ppm dosage level showed an absolute weight reduction of the kidneys with no corresponding relative weight variation or morphological alteration. This was considered to be related to the general weight loss in this group.

3. Histopathology (Tables 18-21 and 24)

There was an absence or reduction in cytoplasmic vacuolation in hepatocytes in the high dose group when compared with the control, the 1000 ppm and the 5000 ppm dose groups. The vacuolation represents glycogen storage and thus there appeared to be a reduction of liver glycogen in the high dose group.

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There were no other treatment related microscopic observations. The lesions described were either observed relatively equally in treated and control animals or they were sporadic in occurrence and minimal in number. These lesions are seen commonly in untreated rats of this age and strain.

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(Path), F.R.V.C.S. (Path) Sweden
Staff Pathologist

11/7/80

Date

Reviewed By:

Ward R.
Ward R. Richter
Director, Path.

11-7-90

Date

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D. RESULTS OF TEST DIET ANALYSES

1. Homogeneity (Appendix III)

Analysis of diet samples taken from the top, middle and bottom of feed batches mixed for 10, 20 and 30 minutes indicated that the 30 minute interval yielded the most homogeneous test article/feed mixture.

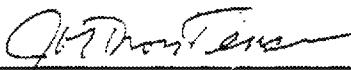
2. Stability (Appendix IV)

Analysis of diets that had been stored for 7 days at room temperature contained 79 to 87% of the target test article concentration (mean of duplicate assays).

3. Periodic Analysis (Appendix V)

The 1000, 5000 and 10,000 ppm diets sampled at study weeks 1-4, 8 and 13 contained 73 to 111% of the target concentrations. The mean concentration found in all diets assayed at each dosage level was 84, 96 and 83% for the 1000, 5000 and 10,000 ppm diets respectively.

Reviewed By:


Joseph Thorstenson, Ph.D.
Director Analytical Chemistry

Date

11/7/81

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VI. DATA STORAGE

All raw data, specimens and reports generated during the conduct of this study are housed in the Archives of the International Research and Development Corporation in Mattawan, Michigan.

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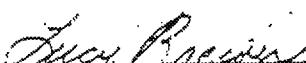
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VII. SIGNATURES

Prepared By:



11-7-80

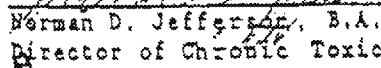
Date

Lucy Stever, M.S.

Report Writer

Department of Report Preparation

Reviewed By:

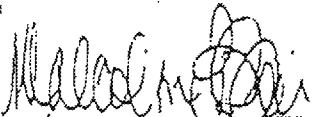


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Date

Norman D. Jefferson, B.A.

Director of Chronic Toxicity



11-7-80

Date

Malcolm Blair, Ph.D.

Assistant Director of General

Toxicology Division

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VIII. DISCUSSION AND CONCLUSION

No changes were seen in general behavior, appearance or mortality that were considered to be related to Dicamba. Group mean body weights and food consumption values were decreased slightly for the high dose group when compared with the control group.

Although some statistically significant values were observed in the clinical laboratory results when the treated groups were compared with the control groups, these absolute differences were small and the values were within the normal range for rats of this sex.

No compound-related gross lesions or organ weight variations were observed in the treated rats. Histopathologic examinations of the liver revealed the absence or reduction of cytoplasmic vacuolation in the hepatocytes of the high dose group.

The no effect level for this study was 5000 ppm.

To the best of my knowledge, there were no significant deviations from the Good Laboratory Practice regulations which affected the quality or integrity of this study. This study was conducted in conformance with the Good Laboratory Practice regulations. This report accurately reflects the raw data obtained during the performance of this study.


James Laveglie, Ph.D.

Study Director

11/11/80
Date

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TABLE I. t-Test Comparison Between Means of Control and Treated Groups, Body Weights

Study Week	Sex	0 ppm (Control)	1000 ppm	5000 ppm	10,000 ppm
13	M	506	508	487	468*
	F	284	291	292	266

*Significantly different from Control group mean, p<0.05

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TABLE 2. MALES: Group Mean Body Weights, Grams; Weight Ranges; and Survival

Week of Study	0 ppm (Control)				1000 ppm				5000 ppm				10,000 ppm			
	Mean Body Wt.	Weight Ranges	Surv- vival													
0	14.2	12.2-15.8	20/20	14.4	12.4-16.4	20/20	14.3	12.7-15.1	20/20	14.0	12.3-15.0	20/20	14.0	12.2-15.0	20/20	
1	20.0	18.0-23.0	20/20	19.9	16.9-22.8	20/20	19.5	17.2-22.4	20/20	17.4	15.2-21.2	20/20	17.4	15.2-21.2	20/20	
2	24.6	16.7-29.7	20/20	25.3	22.1-28.5	20/20	24.7	21.0-28.6	20/20	22.2	19.3-26.9	20/20	22.2	19.3-26.9	20/20	
3	29.2	25.6-35.5	20/20	29.4	26.2-32.8	20/20	28.9	23.7-33.9	20/20	25.8	22.6-31.8	20/20	25.8	22.6-31.8	20/20	
4	34.4	30.3-42.8	20/20	34.9	31.1-39.4	20/20	34.0	30.6-38.9	20/20	30.6	27.2-36.8	20/20	30.6	27.2-36.8	20/20	
5	37.1	32.5-46.0	20/20	37.2	33.0-41.9	20/20	36.3	29.6-41.7	20/20	33.3	28.6-40.8	20/20	33.3	28.6-40.8	20/20	
6	39.7	34.4-48.3	20/20	39.5	34.1-46.1	20/20	38.1	31.5-42.9	20/20	35.1	30.3-44.2	20/20	35.1	30.3-44.2	20/20	
7	42.3	36.6-52.1	20/20	42.6	37.3-48.9	20/20	41.3	36.1-46.7	20/20	38.1	32.5-47.3	20/20	38.1	32.5-47.3	20/20	
8	44.5	38.2-54.6	20/20	44.8	39.0-52.1	20/20	43.3	35.5-49.0	20/20	40.2	34.3-50.7	20/20	40.2	34.3-50.7	20/20	
9	46.6	39.9-57.1	20/20	46.8	40.6-53.6	20/20	45.4	37.3-51.4	20/20	42.4	36.3-52.8	20/20	42.4	36.3-52.8	20/20	
10	46.6	40.1-58.1	20/20	46.7	40.1-54.6	20/20	45.4	36.0-52.7	20/20	42.6	36.1-51.7	20/20	42.6	36.1-51.7	20/20	
11	48.8	42.1-60.4	20/20	49.1	42.0-57.1	20/20	47.6	38.6-54.6	20/20	44.7	37.3-55.0	20/20	44.7	37.3-55.0	20/20	
12	49.8	42.9-61.7	20/20	50.1	42.2-58.5	20/20	48.4	39.2-55.5	20/20	46.2	38.7-57.5	20/20	46.2	38.7-57.5	20/20	
13	50.6	43.3-63.2	20/20	50.6	41.9-59.0	20/20	48.7	39.1-54.5	20/20	46.8	39.5-56.9	20/20	46.8	39.5-56.9	20/20	

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TABLE 2, Cont. FEMALES: Group Mean Body Weights, Grams; Weight Ranges; and Survival

Week of Study	0 ppm (Control)			1000 ppm			5000 ppm			10,000 ppm		
	Mean Body Wt.	Weight Ranges	Sur- vival									
0	127	116-141	20/20	128	111-145	20/20	130	120-141	20/20	129	118-140	20/20
1	158	146-177	20/20	160	141-177	20/20	158	139-172	20/20	151	139-165	20/20
2	177	134-194	20/20	182	160-201	20/20	182	163-196	19/20	175	159-200	20/20
3	197	179-212	20/20	200	173-225	20/20	199	177-220	19/20	190	172-222	20/20
4	223	196-243	20/20	228	193-258	20/20	227	201-250	19/20	216	187-256	20/20
5	230	209-246	20/20	236	203-266	20/20	235	206-264	19/20	223	191-271	20/20
6	240	215-261	19/20	246	209-282	20/20	244	210-275	19/20	231	196-217	20/20
7	252	225-276	19/20	261	221-302	20/20	259	220-291	19/20	241	163-291	20/20
8	259	231-284	19/20	267	228-306	20/20	267	228-303	19/20	249	178-303	20/20
9	266	240-290	19/20	275	239-318	20/20	278	233-317	19/20	256	182-314	20/20
10	265	240-294	19/20	274	237-319	20/20	274	230-319	19/20	255	170-311	20/20
11	276	248-312	19/20	284	248-336	20/20	284	233-330	19/20	265	167-327	20/20
12	281	254-318	19/20	289	250-337	20/20	292	246-345	19/20	265	196-293	20/20
13	284	252-320	19/20	291	249-341	20/20	292	252-346	19/20	266	162-295	19/20

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TABLE

WALLES: Individual Body Weights, Grams

Group, Cat. Number	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
<u>0 ppm (Control):</u>																								
41442	148	201	248	281	334	357	390	410	427	429	434	453	481	487	498 ^b	Sacrificed								
41443	143	158	237	267	353	378	408	426	433	434	435	471	483	490	492	Sacrificed								
41444	139	188	237	268	346	375	394	424	442	448	456	461	471	483 ^b	Sacrificed									
41445	155	211	241	230	387	420	437	472	502	533	562	563	580	597	599	Sacrificed								
41446	141	198	231	294	329	367	388	414	438	453	454	473	471	493	493	Sacrificed								
41447	131	186	180	256	303	333	356	376	399	423	431	437	445	451	451	Sacrificed								
41448	130	180	124	278	331	336	377	416	443	476	471	477	503	523	523	Sacrificed								
41449	157	113	163	266	340	377	407	437	459	443	481	511	536	543 ^b	Sacrificed									
41450	139	197	245	292	333	356	390	410	429	450	463	470	479	491	491	Sacrificed								
41451	131	204	263	302	373	375	400	431	454	478	471	500	508	520	520	Sacrificed								
41452	139	201	235	284	343	371	404	439	454	476	477	494	502	516	516	Sacrificed								
41453	138	186	241	270	314	335	364	387	398	420	426	431	441	448 ^b	Sacrificed									
41454	160	188	133	266	311	325	367	369	387	401	401	425	438	438	438	Sacrificed								
41455	134	189	236	172	307	330	352	366	382	395	401	421	429	433	433	Sacrificed								
41456	158	113	221	361	344	372	413	424	454	472	483	493	497	498 ^b	Sacrificed									
41457	121	182	234	281	332	359	378	405	423	432	447	472	493	502 ^b	Sacrificed									
41458	164	220	286	338	398	433	463	496	517	530	534	537	539	567	567	Sacrificed								
41459	133	205	258	303	337	383	400	424	452	483	480	504	521	531 ^b	Sacrificed									
41460	138	130	229	173	326	346	369	399	422	424	441	458	473	478 ^b	Sacrificed									
41461	133	230	197	353	478	460	482	521	546	571	581	604	617	637 ^b	Sacrificed									
<u>1000 ppm:</u>																								
41482	133	184	239	271	320	336	362	378	397	426	436	473	480	481 ^b	Sacrificed									
41483	124	181	221	262	322	353	383	406	428	451	475	484	488	490	490	Sacrificed								
41484	153	217	280	228	354	419	461	489	521	536	546	571	583	590 ^b	Sacrificed									
41485	140	191	263	287	332	361	380	416	429	442	461	473	491	503 ^b	Sacrificed									
41486	139	214	274	323	382	413	446	475	493	512	526	531	562	577 ^b	Sacrificed									
41487	136	191	243	286	346	366	397	423	436	474	482	504	519	526	526	Sacrificed								
41488	137	190	237	268	311	330	343	373	390	406	401	420	422	433	433	Sacrificed								
41489	133	199	257	295	353	368	384	420	438	467	481	482	496	505 ^b	Sacrificed									
41490	138	187	238	177	370	329	341 ^a	373	393	423	438	452	467	467	467	Sacrificed								
41491	133	206	253	288	334	354	377	404	423	438	453	461	486	486	486	Sacrificed								
41492	154	212	266	313	363	393	406	439	466	477	486	507	511	516	516	Sacrificed								
41493	130	176	232	272	325	350	379	414	420	462	467	481	502	516	516	Sacrificed								
41494	133	213	274	316	373	393	430	453	471	487	496	507	522	522	520	Sacrificed								
41495	133	191	233	273	326	353	366	392	420	429	439	461	477	479 ^b	Sacrificed									
41496	143	192	243	281	343	369	388	427	458	475	486	495	501	511	511	Sacrificed								
41497	141	193	244	286	343	363	392	425	458	484	496	510	524	526	526	Sacrificed								
41498	164	228	285	336	386	410	440	464	487	503	511	521	543	546	546	Sacrificed								
41499	133	214	274	313	387	389	409	423	463	463	486	505	511	511	511	Sacrificed								
41500	143	208	263	302	351	391	403	441	461	481	490	497	501	517	517	Sacrificed								
41501	139	196	252	297	360	383	420	447	461	480	496	507	503	516	516	Sacrificed								

James Wiegert, Ph.D.
Study Director

Date

*Food withheld (body weight not included in mean food consumption calculations)

†Food withheld (body weight included in mean food consumption calculations)

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TABLE 3.

MALES: Individual Body Weights, Grams

Group, Lat Number	0	1	2	3	4	5	6	7	8	9	10	11	12	13
<u>0 ppm (Control):</u>														
41442	146	201	248	281	334	357	390	410	417	439	436	453	467	462 Sacrificed
41443	143	198	257	297	353	379	408	426	439	454	453	474	483	490 Sacrificed
41444	139	186	237	288	348	373	398*	424	442	460	456	481	478	483 Sacrificed
41445	135	179	281	330	387	420	437	477	507	533	543	563	580	597 Sacrificed
41446	141	198	252	294	329	367	388	414	438	455	456	473	478	493 Sacrificed
41447	131	186	180	256	303	333	356	376	399	421	421	437	445	451 Sacrificed
41448	130	160	234	278	331	356	377*	416	445	474	471	487	503	525 Sacrificed
41449	137	213	167	266	340	372	402*	437	459	483	491	516	536	543 Sacrificed
41450	139	197	245	290	335	356	390	410	429	450	445	470	479	491 Sacrificed
41451	151	208	263	301	351	375	400	431	454	478	476	500	508	530 Sacrificed
41452	139	201	255	294	347	371	404	429	454	476	472	494	502	516 Sacrificed
41453	134	186	241	270	314	335	364	387	398	420	420	435	441	448 Sacrificed
41454	140	188	233	266	311	325	348*	369	387	401	401	425	438	435 Sacrificed
41455	134	189	236	272	307	330	352	366	382	399	401	421	429	433 Sacrificed
41456	138	213	275	304	348	372	413	428	434	472	462	497	497	482 Sacrificed
41457	121	182	234	281	332	359	378*	405	433	452	462	481	493	502 Sacrificed
41458	144	220	286	336	388	415	463*	496	517	550	554	576	580	507 Sacrificed
41459	133	205	258	305	357	383	400*	434	458	483	480	504	521	531 Sacrificed
41460	138	190	239	279	326	349	369*	398	422	441	441	458	473	476 Sacrificed
41461	135	230	297	335	428	460	483*	511	546	577	581	604	617	532 Sacrificed
<u>1000 ppm:</u>														
41482	135	184	239	271	320	336	362	378	397	406	406	423	430	419 Sacrificed
41483	124	168	221	262	312	353	383	406	426	451	476	486	470	470 Sacrificed
41484	133	217	186	228	354	419	461	489	521	536	546	571	583	590 Sacrificed
41485	140	191	243	287	337	363	380*	416	439	463	481	489	499	502 Sacrificed
41486	139	214	174	223	387	413	446	479	495	522	526	552	562	577 Sacrificed
41487	136	191	243	286	348	368	397	433	456	476	481	504	513	528 Sacrificed
41488	137	190	231	268	311	330	343*	373	390	406	401	420	422	433 Sacrificed
41489	138	199	232	293	353	368	384	410	438	467	462	484	496	505 Sacrificed
41490	138	187	238	277	320	329	341*	373	393	418	415	434	447	448 Sacrificed
41491	135	208	253	288	334	354	377	404	423	438	443	458	459	464 Sacrificed
41492	134	212	266	313	368	392	406*	439	466	477	496	522	530	544 Sacrificed
41493	130	176	231	272	329	356	379*	414	443	467	467	500	513	526 Sacrificed
41494	135	215	274	316	372	399	430	452	471	493	501	520	528	540 Sacrificed
41495	137	191	239	279	326	353	366*	397	420	439	439	463	477	479 Sacrificed
41496	145	192	245	281	345	369	388*	427	458	473	465	490	504	521 Sacrificed
41497	141	193	244	286	345	365	392	423	438	454	460	486	494	502 Sacrificed
41498	164	228	285	326	386	410	440	464	487	505	493	529	543	546 Sacrificed
41499	153	214	274	315	367	389	409*	443	465	485	488	505	518	533 Sacrificed
41500	143	208	263	302	359	391	403*	441	462	490	487	508	519	521 Sacrificed
41501	139	198	258	297	360	385	420	447	461	480	476	497	505	516 Sacrificed

*Food withheld (body weight not included in mean food consumption calculations)

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TABLE

MALTS: Individual Body Weights, Grams

Group Lat Number	Q	1	2	3	4	5	6	7	8	9	10	11	12	13		
<u>3000 ppm:</u>																
41522	151	262	262	298	344	363	393	429	432	470	448	448	444	433	Sacrificed	
41523	158	187	221	265	306	332	322 ^a	352	367	381	377	375	402	413	Sacrificed	
41524	154	192	244	294	343	361	393	420	438	459	454	476	429	503	Sacrificed	
41525	154	193	239	316	363	382	403 ^a	440	468	482	413	305	311	324	Sacrificed	
41526	154	197	233	301	351	380	411	445	462	491	500	521	511	543	Sacrificed	
41527	152	172	271	260	313	342	355 ^a	388	402	423	434	451	471	473	Sacrificed	
41528	145	189	230	273	334	356	384	421	442	468	463	424	490	472	Sacrificed	
41529	153	207	273	224	382	412	418 ^a	453	483	506	502	524	523	531 ^b	Sacrificed	
41530	142	191	231	265	316	335	360	382	398	417	411	434	443	449	Sacrificed	
41531	157	211	263	309	363	393	424	458	474	482	493	511	530	546	Sacrificed	
41532	152	217	271	318	368	396	408 ^a	438	468	493	473	515	513	524	Sacrificed	
41533	148	203	255	288	338	359	393	423	435	454	458	475	481	497	Sacrificed	
41534	128	173	210	237	278	298	313	341	355	373	340	384	353	351 ^b	Sacrificed	
41535	152	224	266	339	383	410	429 ^a	467	495	514	516	536	553	559	Sacrificed	
41536	130	181	237	274	323	348	376	403	417	436	421	464	471	477 ^b	Sacrificed	
41537	154	201	252	287	335	364	392	416	437	454	463	473	483	503	Sacrificed	
41538	157	190	234	277	328	347	364 ^a	403	423	436	445	477	471	483	Sacrificed	
41539	141	193	247	290	344	369	380 ^a	412	435	453	447	474	473	449 ^b	Sacrificed	
41540	127	173	223	274	327	353	362 ^a	400	422	443	441	473	473	479	Sacrificed	
41541	139	198	232	282	342	364	364 ^a	378	395	413	402	478	477	449 ^b	Sacrificed	
<u>10,000 ppm:</u>																
41562	154	183	233	273	323	343	373	402	427	463	448	463	473	475 ^b	Sacrificed	
41563	133	158	200	233	280	311	364 ^a	393	362	383	375	413	422	428	Sacrificed	
41564	144	181	241	273	333	365	378 ^a	406	438	461	476	504	521	531	Sacrificed	
41565	159	193	244	289	335	354	373	402	425	447	450	477	481	487 ^b	Sacrificed	
41566	136	149	214	254	303	331	343 ^a	383	404	423	432	436	454	453 ^b	Sacrificed	
41567	132	173	213	254	306	333	357	380	398	413	410	413	434	448	Sacrificed	
41568	137	175	223	263	314	343	358 ^a	396	417	431	443	471	471	481 ^b	Sacrificed	
41569	139	170	213	254	304	332	348	368	383	400	404	423	443	437	Sacrificed	
41570	137	184	225	270	309	351	382 ^a	393	423	453	473	493	517	471	409 ^b	Sacrificed
41571	132	170	224	274	314	346	363 ^a	400	422	432	456	476	493	504 ^b	Sacrificed	
41572	142	171	211	244	294	324	333 ^a	366	377	407	416	470	471	465 ^b	Sacrificed	
41573	123	153	193	226	271	311	331 ^a	366	395	423	434	451	462	501	Sacrificed	
41574	148	177	221	261	316	337	368	397	423	440	441	473	482	503	Sacrificed	
41575	133	170	213	246	290	309	333	353	371	397	424	467	471	470	Sacrificed	
41576	160	172	263	213	368	404	442	473	507	523	511	530	573	561 ^b	Sacrificed	
41577	130	163	203	230	271	284	303	325	342	363	361	373	377	393	Sacrificed	
41578	128	164	213	246	291	370	334 ^a	364	382	403	400	413	422	430	Sacrificed	
41579	150	169	203	226	279	312	343	362	387	407	418	437	457	471	Sacrificed	
41580	146	164	233	273	334	368	382 ^a	421	448	467	481	471	511	513 ^b	Sacrificed	
41581	124	158	203	236	283	306	327	339	384	401	427	472	481	433	Sacrificed	

James Lavegina, P.S.D.

Date 7/14/81

Study Director

^aFood withheld (body weight not included in mean food consumption calculations)
^bFood withheld (body weight included in mean food consumption calculations)

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TABLE 3. Cont.

MALES: Individual Body Weights, Grams

Group, Cat Number	0	1	2	3	4	5	6	7	8	9	10	11	12	13
<u>5000 ppm:</u>														
A1322	131	202	261	298	344	365	395	429	450	470	484	488	486	453 Sacrificed
A1323	138	187	229	263	306	332	322*	351	367	381	377	393	402	413 Sacrificed
A1324	144	192	248	294	343	361	393	420	438	458	456	476	449	503 Sacrificed
A1325	144	198	259	316	365	382	403*	440	469	483	483	505	514	534 Sacrificed
A1326	144	197	253	301	351	380	411	445	463	491	490	521	532	543 Sacrificed
A1327	132	172	221	260	317	342	355*	388	401	425	434	458	476	477 Sacrificed
A1328	145	189	230	277	334	356	384	421	442	468	483	484	500	491 Sacrificed
A1329	153	207	273	324	382	413	418*	453	483	506	502	524	539	531 Sacrificed
A1330	142	191	231	265	316	335	360	382	398	417	417	434	443	449 Sacrificed
A1331	157	211	262	309	368	393	424	458	474	487	493	519	530	540 Sacrificed
A1332	152	217	277	318	368	396	408*	438	469	493	497	515	519	524 Sacrificed
A1333	148	205	255	288	338	359	393	420	435	456	458	473	481	492 Sacrificed
A1334	128	173	210	237	278	296	315	341	355	373	366	386	397	391 Sacrificed
A1335	133	224	286	329	389	417	429*	467	490	514	527	546	553	539 Sacrificed
A1336	130	181	227	274	323	348	376	403	437	456	459	484	472	473 Sacrificed
A1337	154	201	251	267	335	366	393	416	437	454	463	477	488	503 Sacrificed
A1338	137	190	234	277	326	347	364*	401	422	441	436	463	477	471 Sacrificed
A1339	141	195	243	290	344	369	382*	412	439	453	462	476	483	482 Sacrificed
A1340	127	179	233	278	327	353	362*	400	422	443	444	473	483	477 Sacrificed
A1341	139	198	252	292	342	344	347*	374	393	417	402	428	442	442 Sacrificed
<u>10,000 ppm:</u>														
A1362	138	181	235	279	322	343	377	402	422	448	448	463	477	475 Sacrificed
A1363	133	158	200	233	280	311	306*	333	362	383	395	413	422	426 Sacrificed
A1364	144	181	241	279	313	363	374*	406	438	461	478	504	521	531 Sacrificed
A1365	159	193	246	289	335	354	373	402	425	447	450	467	480	492 Sacrificed
A1366	136	188	216	254	303	331	343*	383	406	429	432	456	454	453 Sacrificed
A1367	131	173	215	258	308	333	357	380	398	413	410	423	434	448 Sacrificed
A1368	137	175	225	263	316	343	359*	396	417	433	443	472	481	488 Sacrificed
A1369	139	170	216	254	294	317	346	368	388	400	409	425	443	457 Sacrificed
A1370	137	184	229	270	309	331	372*	353	373	393	397	410	421	429 Sacrificed
A1371	112	170	224	263	314	346	363*	400	423	431	456	471	493	504 Sacrificed
A1372	142	171	218	248	298	324	333*	366	377	402	386	410	416	405 Sacrificed
A1373	113	152	193	226	279	312	331*	366	395	423	434	459	483	501 Sacrificed
A1374	148	177	229	262	316	337	366	397	425	443	441	473	492	505 Sacrificed
A1375	133	170	218	246	290	309	333	353	371	392	396	407	417	430 Sacrificed
A1376	160	212	269	318	368	408	422	473	507	521	517	530	375	569 Sacrificed
A1377	130	163	203	230	272	288	303	325	343	363	361	373	387	393 Sacrificed
A1378	129	168	213	246	291	320	334*	364	382	403	400	413	422	430 Sacrificed
A1379	150	169	203	226	279	312	343	362	387	407	418	437	451	451 Sacrificed
A1380	146	184	235	271	338	368	382*	421	418	447	461	478	511	519 Sacrificed
A1381	124	158	205	236	283	306	327	359	384	401	402	422	442	455 Sacrificed

*Food withheld (body weight not included in mean food consumption calculations)

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TABLE

RESULTS: Individual body weight, Gm.

Group #	1	2	3	4	5	6	7	8	9	10	11	12	13		
<u>G total (Control):</u>															
41462	124	132	138	185	203	215	228 ^a	230	235	243	243	250	254	263	Sacrificed
41463	116	144	166	187	228	243	247 ^b	258	270	283	278	284	294	303	Sacrificed
41464	122	160	193	209	234	241	247 ^b	258	270	283	280	284	294	303	Sacrificed
41465	131	152	172	180	201	210	221 ^b	225	231	240	240	251	261	274 ^b	Sacrificed
41466	141	177	184	203	231	239	247 ^b	263	256	275	271	272	276	284 ^b	Sacrificed
41467	120	146	167	179	196	209	213 ^b	226	236	240	243	244	257	271 ^b	Sacrificed
41468	123	154	180	200	220	236	247 ^b	261	268	272	277	285	295	300 ^b	Sacrificed
41469	127	161	182	188	208	220	221 ^b	233	240	243	247	254	263	275 ^b	Sacrificed
41470	111	161	186	212	236	240	249	262	269	273	273	283	294	295 ^b	Sacrificed
41471	122	161	174	183	214	223	244	253	271	264	271	274	281	285 ^b	Sacrificed
41472	131	158	182	200	222	225	240	249	250	255	254	266	265	272 ^b	Sacrificed
41473	118	150	169	192	220	229	232 ^b	254	258	263	265	275	281	288 ^b	Sacrificed
41474	128	157	181	184	222	231	231 ^b	251	266	272	269	282	284	293 ^b	Sacrificed
41475	140	166	183	206	231	238	248	257	269	273	286	281	289	290 ^b	Sacrificed
41476	126	163	182	198	223	236	254	276	284	288	294	312	313	320 ^b	Sacrificed
41477	130	160	184	207	233	229	249	282	266	273	263	273	285	287 ^b	Sacrificed
41478	131	166	187	208	233	246	261	269	284	290	290	303	312	319 ^b	Sacrificed
41479	132	160	179	196	217	220	229	232	261	281	286	290	295	305 ^b	Sacrificed
41480	127	159	186	207	243	246	257	272	284	290	297	302	312 ^b	Sacrificed	
41481	134	158	179 ^b	193	219	218	233	243	247	249	255	260	270	271 ^b	Sacrificed
<u>1000 gm:</u>															
41502	138	170	182	213	241	244	254 ^a	271	276	277	283	293	301	313 ^b	Sacrificed
41503	123	153	175	191	218	221	228 ^a	248	255	274	273	274	283	283 ^b	Sacrificed
41504	121	160	182	212	242	252	254 ^a	271	277	283	282	291	302	309 ^b	Sacrificed
41505	123	154	177	201	222	244	256	268	274	273	279	291	298	303 ^b	Sacrificed
41506	125	167	194	223	253	266	278 ^a	294	304	311	318	326	332	341 ^b	Sacrificed
41507	123	149	170	178	197	209	220	231	233	242	246	251	259	261 ^b	Sacrificed
41508	126	155	171	192	218	223	233	248	249	256	256	260	266	269 ^b	Sacrificed
41509	124	158	176	191	206	219	234	239	247	257	254	266	263	264 ^b	Sacrificed
41510	111	141	160	173	193	203	209 ^a	221	226	241	237	243	257	258 ^b	Sacrificed
41511	115	144	163	173	200	203	209 ^a	228	234	239	237	244	250	255 ^b	Sacrificed
41512	123	153	177	188	213	231	246	264	272	272	273	281	294	294 ^b	Sacrificed
41513	124	156	183	206	234	242	253	268	275	284	291	294	304	312 ^b	Sacrificed
41514	134	163	183	202	240	241	250 ^a	273	283	291	289	303	303	304 ^b	Sacrificed
41515	132	160	190	204	238	246	257 ^a	271	275	293	294	306	307	311 ^b	Sacrificed
41516	128	170	184	216	247	258	272	287	295	296	298	309	319	324 ^b	Sacrificed
41517	140	162	181	194	213	215	223 ^a	234	243	247	248	254	257	261 ^b	Sacrificed
41518	143	170	181	211	233	239	246 ^a	262	254	266	273	284	288	295 ^b	Sacrificed
41519	140	172	197	216	239	257	271	280	283	293	293	300	305	307 ^b	Sacrificed
41520	129	163	201	223	258	263	282	302	324	324	322	322	329 ^b	Sacrificed	
41521	125	157	178	194	223	226	240	253	270	287	291	291	297	298 ^b	Sacrificed

James Lavey, Ph.D.
Study Director

Date
7/2/81

*Food withheld (body weight not included in mean food consumption calculations)
†Food withheld (body weight included in mean food consumption calculations)
(63-67) Animal fasted, died prior to body weight measurement. Body weight not recorded.

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TABLE 3. Cont.

PELLETS: Individual Body Weights, Grams

Group, Lat. Number	0	1	2	3	4	5	6	7	8	9	10	11	12	13
<u>0 ppm (Control):</u>														
41462	324	152	138	185	203	219	228*	230	233	245	245	250	254	263
41463	116	144	166	197	228	243	Died							
41464	122	160	193	209	234	241	247*	258	270	283	278	268	294	303
41465	131	152	171	180	202	210	221*	225	231	240	240	252	261	259
41466	141	177	184	203	231	239	247*	263	254	273	271	282	276	284
41467	120	146	167	179	196	209	215*	226	236	240	243	248	257	251
41468	123	154	180	200	230	236	247*	261	248	262	277	290	293	300
41469	127	181	182	188	208	220	221*	233	240	243	247	254	261	253
41470	127	161	186	212	236	240	249	262	264	273	275	285	294	295
41471	122	161	184	183	214	223	244	255	257	271	264	271	274	281
41472	131	158	183	200	222	225	240	249	250	257	254	264	265	271
41473	118	150	168	171	220	229	232*	254	254	263	265	275	281	288
41474	128	157	181	194	222	231	231*	251	264	273	269	282	288	293
41475	140	166	185	208	231	238	248	257	265	273	268	281	289	290
41476	126	163	182	198	229	236	254	276	284	288	294	312	318	320
41477	130	160	188	207	233	229	249	262	266	275	265	285	283	287
41478	131	166	187	209	233	246	261	259	284	290	290	305	311	319
41479	132	160	179	196	217	220	229	232	241	247	246	250	253	259
41480	127	138	186	207	243	246	257	272	284	290	287	302	312	313
41481	133	158	179	195	213	218	235	243	247	249	253	260	270	263
<u>1000 ppm:</u>														
41502	138	170	191	213	241	244	254*	271	276	277	285	295	301	293
41503	122	153	173	191	218	231	238*	248	255	274	273	278	283	289
41504	121	160	182	212	242	252	254*	272	277	285	282	294	303	296
41505	119	154	172	202	231	244	256	268	274	279	279	291	298	302
41506	125	167	194	223	253	266	278*	294	304	316	319	336	337	341
41507	133	149	170	178	197	209	220	231	233	242	246	251	259	261
41508	126	155	172	192	218	223	233	248	249	256	250	260	266	269
41509	124	158	176	191	206	219	234	239	247	257	254	266	263	264
41510	121	141	160	173	193	203	209*	221	228	241	237	249	257	259
41511	115	144	163	175	200	203	209*	228	234	239	237	248	250	249
41512	123	153	177	188	223	231	246	264	272	282	273	287	294	294
41513	124	156	183	206	234	242	253	268	275	284	281	294	304	311
41514	134	165	183	202	240	247	250*	273	283	291	289	308	305	304
41515	131	160	190	204	238	246	252*	271	273	293	284	296	307	310
41516	122	170	194	216	247	258	271	287	295	298	298	309	313	324
41517	140	162	181	194	213	215	225*	234	243	261	246	254	257	263
41518	143	170	192	212	233	239	246*	262	264	268	273	258	253	269
41519	140	177	197	216	232	237	271	280	283	294	293	300	305	307
41520	129	168	201	213	238	263	282	302	306	313	311	326	332	328
41521	125	157	178	194	223	226	240	253	263	269	251	276	279	278

*Food withheld (body weight not included in mean food consumption calculations)

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TABLE FEMALE: Individual Body Weights, Grams

Group No. Number	0	1	2	3	4	5	6	7	8	9	10	11	12	13	
<u>5000 grams</u>															
41342	140	171	196	220	250	264	275	291	301	317	367	318	324	274 ^b	Sacrificed
41343	134	141	182	202	227	229	239	246	253	264	263	275	182	230 ^a	Sacrificed
41344	129	164	190	211	234	256	257 ^a	278	282	295	284	300	304	216 ^a	Sacrificed
41345	129	169	187	201	221	240	247 ^a	263 ^a	276	284	280	285	293	300	Sacrificed
41346	130	143	189	203	234	243	257	264	282	295	290	295	302	210	Sacrificed
41347	121	156	181	202	231	244	265	286	293	307	305	323	330	296	Sacrificed
41348	131	158	175	193	197	223	240 ^a	259	268	277	276	285	294	296	Sacrificed
41349	128	154	165	181	193	206	212	220	228	233	230	233	244	232	Sacrificed
41350	120	151	180	193	223	242	252	264	277	291	283	293	300	303	Sacrificed
41351	126	165	190	211	232	238	248 ^a	262	262	270	291	278	287	291 ^b	Sacrificed
41352	128	145	171	182	201	213	223	237	244	250	254	259	272	271 ^b	Sacrificed
41353	128	166	163	177	201	207	210 ^a	227	238	243	238	251	253	257 ^b	Sacrificed
41354	123	153	177	197	223	231	239 ^a	256	259	264	270	278	275	287	Sacrificed
41355	133	160	177	182	213	214	223 ^a	238	243	245	244	256	267	270	Sacrificed
41356	129	151	179	193	225	226	241	254	259	271	283	276	277	282 ^b	Sacrificed
41357	141	167	188	203	225	243	250 ^a	268	275	286	281	296	300	289 ^a	Sacrificed
41358	131	162	183	213	250	258	269 ^a	288	303	313	313	330	343	246	Sacrificed
41359	125	155	178	194	223	237	243	263	275	279	275	286	291	294 ^b	Sacrificed
41360	129	139	164 ^a	183	198	127	132	136	133	278	281	272	277	278 ^b	Sacrificed
41361	125	164	183	198	127	132	136	133	263	278	281	272	277	278 ^b	Sacrificed
<u>10,000 grams</u>															
41362	119	143	164	178	212	220	228 ^a	235	263	264	270	282	290	294 ^b	Sacrificed
41363	124	149	168	179	208	214	218 ^a	233	244	258	253	262	266	267 ^b	Sacrificed
41364	123	157	183	193	220	229	234 ^a	251	253	265	260	267	267	271	Sacrificed
41365	134	156	183	188	210	220	228 ^a	245	255	266	263	274	282	283	Sacrificed
41366	128	155	178	191	214	228	229 ^a	240	251	254	253	260	269	284 ^b	Sacrificed
41367	126	143	174	183	211	217	223	230	236	244	242	247	257	258	Sacrificed
41368	140	153	192	201	227	236	248	256	260	269	266	282	285	289	Sacrificed
41369	134	156	178	201	229	237	238	261	271	274	273	287	292	278 ^b	Sacrificed
41370	132	151	165	183	216	226	239	253	252	264	266	274	283	287 ^b	Sacrificed
41371	138	156	182	204	223	233	246	262	266	270	272	283	281	289	Sacrificed
41372	132	147	183	175	198	199	204 ^a	221	220	243	238	244	253	251	Sacrificed
41373	129	130	175	190	221	232	218 ^a	163	178	171	169	187	194	197 ^b	Sacrificed
41374	133	156	181	186	224	221	237	254	252	263	263	274	284	285 ^b	Sacrificed
41375	126	144	163	179	206	216	214 ^a	232	241	247	247	258	258	269 ^b	Sacrificed
41376	124	141	166	176	197	205	213	225	234	243	244	255	257	257 ^b	Sacrificed
41377	134	160	185	196	221	234	251	254	262	271	264	287	291	295	Sacrificed
41378	126	165	190	222	236	271	277 ^a	291	303	314	313	327	321	294 ^a	
41379	118	139	159	172	217	217	191	196 ^a	210	217	221	223	227	221	
41380	122	143	168	183	209	218	223	244	247	254	253	264	271	271 ^b	Sacrificed
41381	131	144	173	183	211	214	218	238	244	253	247	251	260	253	Sacrificed


James Lavegina, Ph.D.
Study Director

Date 1/2/81

*Food withheld (body weight not included in mean food consumption calculations)

†Food withheld (body weight included in mean food consumption calculations)

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TABLE 3. Cont.

PENALTY: Individual Body Weights, Grams

Group, Lot Number	0	1	2	3	4	5	6	7	8	9	10	11	12	13
<u>5000 ppm:</u>														
41542	140	172	194	220	230	264	275	291	301	317	307	318	324	324
41543	136	162	182	202	227	229	238	246	255	266	263	275	283	280
41544	129	164	190	211	238	256	257*	278	282	296	294	300	308	310
41545	139	168	189	202	231	260	247*	263	274	284	280	285	293	300
41546	130	163	189	203	236	245	257	268	282	295	290	299	302	310
41547	121	156	181	201	231	246	265	286	293	307	305	329	330	296
41548	131	158	175	195	227	233	240*	259	268	277	276	283	294	296
41549	128	154	165	181	195	206	212	220	228	233	230	233	246	253
41550	120	152	180	199	233	242	252	264	277	295	283	295	300	305
41551	136	165	190	211	232	238	248*	263	262	270	271	279	287	291
41552	128	143	172	182	202	213	223	237	244	250	254	259	272	271
41553	128	146	163	177	201	207	210*	227	238	243	236	231	239	237
41554	123	153	177	197	223	231	239*	256	259	266	270	276	283	287
41555	133	160	177	192	215	224	223*	236	243	249	243	256	267	270
41556	123	152	179	193	225	228	241	254	259	271	263	276	277	282
41557	141	167	188	203	235	245	250*	268	275	286	281	296	300	299
41558	131	162	193	215	250	256	269*	288	303	315	313	330	343	346
41559	125	155	178	204	233	237	248	265	275	279	273	286	298	294
41560	136	139	Died											
41561	133	166	185	198	227	232	236*	253	263	270	262	272	277	272
<u>10,000 ppm:</u>														
41582	119	143	166	178	212	220	228*	233	265	268	270	282	290	294
41583	124	149	168	179	208	214	218*	233	244	250	253	262	266	267
41584	125	157	183	199	220	229	232*	251	253	263	260	267	267	271
41585	134	156	183	188	213	220	226*	243	253	268	263	274	282	283
41586	128	155	178	191	214	218	229*	240	251	254	255	260	269	269
41587	126	145	174	185	211	217	225	230	236	244	242	247	257	258
41588	140	163	192	201	227	236	248	256	260	269	266	262	281	284
41589	134	156	178	207	229	237	258	261	271	274	273	287	292	278
41590	121	131	165	185	216	226	239	253	252	266	266	274	293	287
41591	138	156	182	204	223	233	246	262	266	270	271	283	285	289
41592	132	147	163	173	198	199	208*	221	233	243	238	244	253	251
41593	129	150	175	190	221	232	216*	163	176	182	190	187	196	167
41594	135	156	181	196	224	221	237	254	262	263	263	278	284	282
41595	126	148	163	179	208	216	214*	232	241	247	247	259	262	261
41596	134	141	166	176	192	205	217	223	234	242	243	253	257	257
41597	136	160	183	196	231	234	251	254	262	274	268	287	291	295
41598	136	165	200	223	256	271	277*	291	303	314	311	327	211	Died
41599	118	139	159	171	187	191	196*	210	217	221	223	227	231	234
41600	122	143	168	185	209	218	233	244	247	256	253	266	272	271
41601	131	146	173	183	211	218	228	238	246	253	247	257	260	263

*Food withheld (body weight not included in mean food consumption calculations)

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TABLE 4. Mean Food and Compound Consumption

Week of Study	0 ppm (Control)			1000 ppm			5000 ppm			10,000 ppm		
	Food		Cmpd									
	g/ rat/ day	kg/ day	mg/ kg/ day									
MALES:												
1	21.2	105.8	21.0	105.6	96.5	19.7	101.0	505	15.7	90.0	900	
2	23.3	94.9	24.4	96.5	91.5	23.4	94.7	474	20.2	91.2	912	
3	26.5	90.7	26.9	91.5	91.5	25.9	89.7	448	22.7	88.0	880	
4	26.4	76.7	27.4	78.6	78.6	26.3	77.3	187	24.6	80.3	803	
5	26.7	71.8	27.3	73.5	73.5	26.0	71.5	357	24.3	72.9	729	
6	26.4	67.4	27.3	66.5	66.5	25.4	66.0	330	23.9	66.9	669	
7	26.8	63.2	27.3	64.1	64.1	26.4	64.0	320	24.5	64.2	642	
8	26.8	60.3	26.7	59.6	59.6	26.1	60.3	301	24.6	61.3	613	
9	26.9	57.6	26.7	57.0	57.0	26.2	57.8	289	24.5	57.8	578	
10	25.3	54.3	24.9	53.2	53.2	24.9	54.9	274	23.3	54.8	548	
11	26.2	53.6	26.4	53.7	53.7	25.5	53.6	268	24.7	55.2	552	
12	26.5	53.2	26.8	53.5	53.5	25.2	52.1	261	25.7	55.6	556	
13	24.2	47.1	24.5	48.3	48.3	22.9	47.0	235	22.9	48.9	489	
FEMALES:												
1	17.4	110.3	17.0	105.9	105.9	16.4	103.8	519	16.0	92.8	928	
2	17.5	98.6	18.2	100.0	100.0	17.7	97.4	487	16.9	96.4	964	
3	19.5	98.8	19.6	97.9	97.9	18.9	95.1	475	17.2	90.8	908	
4	19.5	87.3	21.1	92.3	92.3	19.7	86.9	436	18.0	83.4	834	
5	19.3	83.9	19.6	83.1	83.1	19.3	82.2	411	17.4	78.2	782	
6	19.9	80.7	19.5	77.8	77.8	18.7	76.1	380	17.6	73.8	738	
7	19.9	78.9	19.6	75.1	75.1	19.4	75.0	375	17.2	71.5	715	
8	18.9	73.1	19.1	71.4	71.4	19.4	72.8	364	17.5	70.2	702	
9	19.5	73.3	19.5	70.9	70.9	19.4	69.8	349	17.2	67.3	673	
10	18.4	69.5	18.4	67.1	67.1	18.7	68.1	340	16.9	66.2	662	
11	19.1	69.1	18.6	65.6	65.6	19.0	67.1	335	17.2	64.9	649	
12	19.1	68.1	19.1	66.0	66.0	19.4	66.3	332	16.5	62.4	624	
13	17.5	61.7	17.5	60.3	60.3	17.1	58.7	294	15.4	57.9	579	

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TABLE 5.

MALES: Means and Significance of Hematological Values

Hematology	Study Week	0 ppm (Control)	1000 ppm	3000 ppm	10,000 ppm
Erythrocytes $10^6/\text{cmm}^3$	6	7.08	7.31	7.13	6.94
	13	7.97	7.76	7.56	7.75
Hemoglobin g/dl	6	16.6	16.5	16.2	15.7**
	13	16.3	15.7*	16.1	15.7*
Hematocrit $\%$	6	45.0	45.1	43.1	41.9**
	13	47.4	45.7	47.3	46.0
Leucocytes $10^3/\text{cmm}^3$	6	11.0	9.6	10.3	11.1
	13	9.9	8.7	9.4	11.0
Platelets $10^3/\text{cmm}^3$	6	1076	1013	1023	1013
	13	660	663	665	657
Erythrocytes $/100 \text{ WBC}$	6	3.1	2.9	3.0	2.8
	13	3.1	2.7	3.3	2.7
MCV ^a	6	64	62	60	60
	13	60	59	60	59
MCH ^b	6	23.5	22.6	22.4	22.4
	13	20.7	20.1	20.3	20.3
MCHC ^c	6	36.9	36.6	37.3	37.4
	13	34.7	34.3	34.9	34.2


 James Lavegitter, Ph.D.
 Study Director

Date 1/16/81

*Significantly different from Control group mean, $p < 0.05$
**Significantly different from Control group mean, $p < 0.01$
^aNo statistical analysis performed

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TABLE 5. cont MALES: Mean and Significance of Hematological Values

Hematology	Study Week	0 ppm (Control)	1000 ppm	5000 ppm	10,000 ppm
Erythrocytes 10 ⁶ /mm ³	6	7.08	7.31	7.23	6.94
	13	7.97	7.76	7.98	7.73
Hemoglobin g/dl	6	16.6	16.3	16.1	15.7**
	13	16.5	15.7*	16.3	15.7*
Hematocrit %	6	45.0	45.1	43.2	41.9**
	13	47.4	45.7	47.5	46.0
Leucocytes 10 ³ /mm ³	6	11.0	9.6	13.3	11.1
	13	9.9	8.7	9.4	11.0
Platelets 10 ³ /mm ³	6	1074	1013	1025	1015
	13	660	663	665	657
Reticulocytes /100 RBC	6	3.2	2.9	3.0	2.1
	13	3.1	2.7	3.3	2.7

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*Significantly different from Control group mean, p<0.25

**Significantly different from Control group mean, p<0.21

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TABLE 3. Cont.

RESULTS: Means and Significance of Hematological Values

Hematology	Study Group	0 ppm (Control)*	1000 ppm	3000 ppm	10,000 ppm
Erythrocytes $\times 10^6/\text{mm}^3$	6	7.12	7.33	7.23	7.16
	13	7.61	7.35	7.68	7.38
Hemoglobin g/dl	6	16.1	17.0**	16.1	16.2
	13	15.9	15.3	15.9	15.4
Hematocrit %	6	44.7	44.3	44.6	44.1
	13	44.2	45.2	44.6	43.1
Leukocytes $\times 10^3/\text{mm}^3$	6	7.7	10.9**	8.6	8.7
	13	8.3	7.1	6.7	10.3*
Platelets $\times 10^3/\text{mm}^3$	6	1106	984**	1013*	949*
	13	670	640	641	673
Reticulocytes $/100 \text{ RBC}$	6	1.1	1.4	1.2	1.3
	13	1.0	1.4	1.4	1.3
WBC ^a	6	63	63	61	61
	13	61	61	61	61
WBC ^b	6	22.6	23.2	22.1	22.8
	13	20.9	22.0	20.7	21.1
WBC ^c p/dl	6	36.0	36.7	36.0	36.7
	13	34.3	34.4	34.2	34.3


 James Laveglie, Ph.D.

Study Director

1/2/81

Date

*Significantly different from Control group mean, p<0.05
 **Significantly different from Control group mean, p<0.01

^No statistical analysis performed

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TABLE 5, Cont.

FEMALES: Means and Significance of Hematological Values

Hematology	Study Week	0 ppm (Control)	1000 ppm	5000 ppm	10,000 ppm
Erythrocytes $10^6/\text{mm}^3$	6	7.12	7.13	7.23	7.16
	13	7.81	7.39	7.66	7.34
Hemoglobin g/dl	6	16.1	17.0*	16.1	16.1
	13	15.9	15.5	15.9	15.6
Hematocrit $\%$	6	44.7	46.3	44.6	44.1
	13	44.2	45.2	44.6	45.1
Leucocytes $10^3/\text{mm}^3$	6	7.7	10.9*	8.4	8.1
	13	3.3	7.1	6.7	10.3*
Platelets $10^3/\text{mm}^3$	6	1106	984**	1013*	940**
	13	670	640	641	673
Reticulocytes $/100 \text{ RBC}$	6	1.1	2.4	2.2	2.3
	13	1.0	2.4	2.6	3.3

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*Significantly different from Control group mean, p<0.05

**Significantly different from Control group mean, p<0.01

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TABLE 6
Individual Hematological Values - Baseline

Group, Rac Number	Sex	Myelobocytes $10^3/\text{mm}^3$	Hemoglobin mg/dl	Hematocrit %	Leucocytes $10^3/\text{mm}^3$	MCV μl	MCH g/dl	MCHC g/dl	Plates $10^3/\text{mm}^3$	Neutrocytes $/100\text{ RBC}$
R-27042	H	4.25	11.9	42.4	3.5	68	32.1	32.6	1342	10.0
R-27046	H	5.90	14.3	47.8	6.6	73	24.6	33.9	1481	9.7
R-27050	H	5.44	13.7	46.7	6.3	75	25.2	31.7	1410	9.1
R-27071	H	6.27	14.8	43.7	7.9	70	23.8	31.9	1354	9.2
R-27083	H	5.39	14.1	42.4	6.6	76	25.2	33.3	1608	9.8
R-27090	H	5.67	14.6	41.5	8.4	73	25.7	35.2	1329	8.4
R-27106	H	5.34	14.0	42.4	5.8	77	25.3	32.9	1701	9.3
R-27123	H	5.62	13.5	41.1	6.5	73	24.9	32.8	1364	11.2
R-27137	H	5.57	13.6	40.3	6.2	73	26.4	33.3	1789	7.3
R-27139	H	6.07	13.8	41.2	4.7	68	22.7	33.5	1646	11.0
R-27163	F	5.31	13.6	40.3	4.3	76	25.6	32.7	1225	6.8
R-27164	F	5.76	13.6	39.9	3.1	69	23.6	34.1	1380	11.7
R-27201	F	6.02	14.3	42.6	4.1	71	24.1	33.2	1586	9.0
R-27210	F	5.82	13.9	40.6	2.4	70	23.9	34.1	1265	6.8
R-27214	F	5.85	14.2	41.2	5.6	70	24.3	36.3	1314	12.0
R-27215	F	6.97	14.3	42.1	4.0	69	23.6	34.0	1420	7.8
R-27237	F	6.07	14.3	43.2	3.7	70	23.9	34.4	1457	10.9*
R-27251	F	6.09	14.3	41.4	3.4	68	23.3	34.3	1736	7.9
R-27360	F	6.11	14.4	42.3	2.6	70	23.6	33.7	1916	7.2
R-27362	F	6.18	14.4	42.4	3.5	69	23.3	33.6	1400	9.5

Cm³ = cubic millimeter
dl = deciliter
RBC = Red Blood Cells
*Request determination

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TABLE 6. Control Individual Hematological Values - Baseline

Group	Rat Number	Sex	Neutrophils /100 WBC	Eosinophils /100 WBC	Lymphocytes /100 WBC	Monocytes /100 WBC	Basophilic stems /100 WBC	Other cells /100 WBC	Polychro- mophilic leukocytes /100 WBC	Hypochro- mophilic leukocytes /100 WBC	Polikiloc- ytosis /100 WBC	Aniso- cytosis /100 WBC
R-27047	H	H	12	0	66	0	2	0	0	0	0	0
R-27048	H	H	5	0	90	1	4	0	0	0	0	0
R-27050	H	H	17	0	80	0	3	0	0	0	0	0
R-27077	H	H	42	0	42	0	2	0	0	0	0	0
R-27083	H	H	1	0	94	0	1	0	0	0	0	0
R-27096	H	H	10	0	83	2	3	0	0	0	0	0
R-27106	H	H	13	1	84	0	2	0	0	0	0	0
R-27123	H	H	9	1	85	1	4	0	0	0	0	0
R-27137	H	H	11	1	86	1	1	0	0	0	0	0
R-27150	H	H	14	0	83	0	1	0	2	0	0	0
R-27163	F	F	16	1	79	0	4	0	0	0	0	0
R-27194	F	F	10	0	69	0	1	0	0	0	0	0
R-27201	F	F	17	3	79	1	0	0	0	0	0	0
R-27210	F	F	13	0	83	2	2	0	0	0	0	0
R-27211	F	F	12	1	85	1	1	0	0	0	0	0
R-27215	F	F	9	0	91	0	0	0	0	0	0	0
R-27237	F	F	13	0	66	0	1	0	0	0	0	0
R-27251	F	F	18	1	78	0	3	0	0	0	0	0
R-27260	F	F	20	1	76	0	3	0	0	0	0	0
R-27262	F	F	13	0	84	0	3	0	0	1	0	0

Legend:
 0 = white segment leukocyte
 1 = 1-10% cells affected
 2 = 26-50% cells affected
 3 = 51-75% cells affected
 4 = 76-100% cells affected
 WBC = white blood cells = leukocytes

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TABLE I
Individual Hematological Values - 6 Weeks

Group, Cat. Number	Sex	Erythrocytes 10 ³ /mm ³	Hemoglobin mg/dl	Monocyte %	Leucocytes 10 ³ /mm ³	HCV %	HGB g/dl	HMG 10 ³ /mm ³	Plates 10 ³ /mm ³	Reticulocytes /100 RBC
0 ppm (Control)										
A1446	M	6.55	15.4	41.0	6.1	6.3	22.5	37.4	876	2.7
A1448	M	7.20	17.0	45.3	6.8	6.3	23.6	37.4	971	2.8
A1469	M	6.97	16.5	44.8	12.5	6.5	23.8	36.8	1076	4.3
A1451	M	6.89	16.3	43.9	12.0	6.7	23.3	37.8	1054	3.4
A1454	M	7.71	16.6	46.1	11.1	6.0	21.3	36.0	1263	3.1
A1457	M	7.32	16.2	46.3	12.2	6.4	21.4	36.3	1193	3.2
A1458	M	6.39	16.1	42.4	10.4	6.7	25.2	37.8	1009	4.3
A1459	M	7.41	17.0	46.2	13.5	6.7	22.3	36.8	1197	2.3
A1460	M	7.52	17.3	48.0	9.5	6.5	23.0	36.0	979	2.3
A1461	M	7.02	17.1	46.3	11.6	6.6	24.4	36.7	1077	2.3
A1462	F	6.85	15.7	40.9	6.3	6.6	22.9	35.8	815	2.2
A1463	F	7.59	17.4	48.7	8.7	6.4	22.9	35.7	979	3.0
A1464	F	6.46	15.0	42.0	6.5	6.5	21.5	35.7	1176	1.6
A1465	F	7.46	16.1	45.2	8.9	6.0	21.5	35.6	1056	2.1
A1466	F	7.16	16.0	44.8	9.9	6.3	21.3	35.7	1156	2.2
A1467	F	7.31	17.0	46.1	5.5	6.3	23.3	36.9	1110	2.0
A1468	F	6.86	15.1	41.5	5.8	6.2	21.9	35.5	1001	1.4
A1469	F	7.07	15.3	42.7	7.1	6.0	21.6	35.8	1147	1.8
A1470	F	7.04	16.2	44.6	9.1	6.5	23.4	37.0	1086	1.8
A1474	F	7.35	16.8	46.0	6.5	6.1	23.9	36.5	1039	2.7
1000 RBC:										
A1485	M	7.56	16.8	45.2	12.7	6.0	22.2	37.2	979	2.7
A1486	M	7.38	16.8	45.3	8.3	6.2	22.8	36.9	973	2.1
A1487	M	7.11	16.1	43.7	11.3	6.4	21.3	36.3	963	2.2
A1490	M	6.93	16.5	43.2	6.4	6.1	23.8	36.3	993	2.3
A1492	M	7.33	16.2	46.3	8.1	6.3	22.3	35.5	1013	2.2
A1493	M	7.77	16.0	41.3	11.1	6.0	23.0	36.8	1071	3.1
A1495	M	6.98	16.3	43.3	9.8	6.7	23.4	37.3	1090	2.9
A1496	M	7.64	17.0	45.8	2.4	6.0	22.3	37.1	779	2.8
A1499	M	7.42	16.5	45.6	6.6	6.1	23.7	36.2	1061	2.3
A1500	M	7.63	16.3	44.6	11.6	6.0	21.7	35.9	1066	2.0
A1502	F	6.77	17.1	43.5	6.9	6.5	25.2	39.0	1032	2.4
A1503	F	7.38	17.3	47.9	9.7	6.3	22.8	36.1	916	2.2
A1504	F	7.13	16.7	46.1	9.0	6.4	23.4	36.2	959	2.1
A1506	F	7.01	16.9	46.2	13.1	6.6	24.1	36.4	1034	2.1
A1510	F	7.10	16.0	44.3	8.9	6.1	21.9	36.0	1000	1.9
A1511	F	6.34	16.2	37.3	16.6	6.4	22.4	34.8	955	3.0
A1512	F	7.16	15.9	44.1	14.9	6.7	23.4	35.7	1111	2.4
A1513	F	6.97	16.2	44.6	6.8	6.4	23.4	36.3	913	1.3
A1514	F	7.31	17.3	46.4	16.9	6.7	22.9	37.1	997	2.2
A1516	F	7.71	16.5	47.3	10.6	6.1	24.0	37.4	863	2.8

cmm = cubic millimeter
%dL = decimal
RBC = Red blood cells

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Table I: Count of Individual Hematological Values - 6 Weeks

Group, Sex, Number	Cells /100 WBC	Neutrophils		Lympho- cytes		Eosino- phils		Mon- ocytes		Baso- phils		Kerato- philic cells		Hypo- chromic cells		Reticulo- cytes		Aniso- cytosis	
		Seg.	Non-seg.	/100 WBC	/100 WBC	/100 WBC	/100 WBC	/100 WBC	/100 WBC	/100 WBC	/100 WBC	/100 WBC	/100 WBC	/100 WBC	/100 WBC	/100 WBC	/100 WBC	/100 WBC	/100 WBC
0 RPM (Control)																			
41444	M	14	0	87	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0
41445	M	6	0	89	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0
41449	M	12**	0**	80**	1**	4**	0**	0	0	0	0	0	0	0	0	0	0	0	0
41451	M	14	0	84	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
41452	M	6	1	88	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
41453	M	12	0	85	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0
41456	M	7	0	91	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41459	M	10	0	89	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41460	M	14	1	78	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0
41461	M	13	0	84	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0
41462	F	3	0	94	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41463	F	15	0	84	1	9	0	0	0	0	0	0	0	0	0	0	0	0	0
41464	F	10	0	81	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0
41465	F	14	0	61	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0
41466	F	11	0	88	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
41467	F	17	0	81	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
41468	F	17	1	79	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0
41469	F	19	0	76	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0
41473	F	17	0	79	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
41474	F	13	0	63	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0
1000 RPM																			
41483	M	7	0	90	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0
41486	M	11	0	69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41488	M	7	1	92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41490	M	15	0	60	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0
41493	M	14	0	79	1	6	0	0	0	0	0	0	0	0	0	0	0	0	0
41497	M	12	2	81	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0
41499	M	21	1	74	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0
41500	M	16	0	98	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0
41502	M	7	0	67	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0
41503	M	10	1	66	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0
41506	M	10	0	64	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0
41508	M	11	0	61	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
41510	M	16	1	71	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
41511	M	7	0	69	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0
41514	M	16	0	60	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0
41515	M	16	1	79	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
41516	M	12	0	64	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
41518	M	11	0	64	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0

*Gated: 0 = white blood cells - Leucocytes

**White blood cells - Lymphocytes

*Reported determinations

1 - 1-10X cells affected

2 - 26-30X cells affected

3 - 31-35X cells affected

4 - 36-100X cells affected

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TABLE 1. GONE, Individual Hematological Values - 6 Weeks

Group, RBC Number	Sex	Myeloblasts 10 ³ /mm ³	Reticulocytes 10 ³ /mm ³	Hematocrit %	Hemoglobin g/dL	Lymphocytes 10 ³ /mm ³	Monocytes 10 ³ /mm ³	Neutrophils 10 ³ /mm ³	PMN %	Plates- lets 10 ³ /mm ³	RBC #/cL	Red blood cells #/100 cL
<u>1000 RBC:</u>												
A1523	M	7.37	16.7	43.1	13.7	64	12.7	37.0	99	3.1	1114	2.9
A1525	M	6.74	11.6	40.3	12.1	64	13.1	38.7	1114	3.2	1114	3.2
A1527	M	7.83	17.7	46.4	12.9	39	22.0	37.1	99	3.1	1114	2.5
A1528	M	6.96	12.4	41.6	8.3	63	12.1	37.0	97	2.5	1114	2.5
A1532	M	7.03	13.1	41.1	16.6	36	11.5	36.7	1015	2.4	1114	2.4
A1533	M	7.30	16.9	44.3	20.7	61	13.2	38.1	1015	3.1	1114	3.1
A1538	M	7.75	13.9	42.6	11.6	36	11.9	37.5	1052	3.2	1114	3.2
A1539	M	7.39	15.7	41.7	11.8	37	11.3	37.5	1114	2.3	1114	2.3
A1540	M	7.04	16.3	43.0	10.4	64	13.4	37.9	1044	2.8	1114	2.8
A1541	M	7.46	16.9	43.4	11.8	43	12.7	37.2	906	3.4	1114	3.4
A1544	F	7.48	15.2	45.7	8.0	61	20.3	33.3	599	3.5	1114	3.5
A1545	F	6.66	13.8	42.9	15.1	64	13.7	36.8	967	1.8	1114	1.8
A1546	F	7.02	15.5	44.0	6.3	63	22.3	35.9	962	2.1	1114	2.1
A1551	F	7.44	16.7	43.7	10.3	61	12.4	36.5	1044	2.2	1114	2.2
A1553	F	7.62	16.3	45.5	2.9	60	21.7	36.3	720	2.6	1114	2.6
A1554	F	6.97	13.6	42.7	6.3	41	12.1	36.1	963	2.0	1114	2.0
A1555	F	7.58	16.2	44.6	8.1	37	21.4	36.3	1121	3.2	1114	3.2
A1557	F	7.46	16.6	43.4	6.0	41	21.3	36.4	1043	6.6	1114	6.6
A1558	F	7.21	15.3	42.9	7.7	60	21.3	36.1	976	2.4	1114	2.4
A1561	F	7.43	16.9	46.4	4.3	61	21.7	36.4	1117	4.4	1114	4.4
<u>10,000 RBC:</u>												
A1563	M	6.90	16.8	43.6	13.6	60	14.1	38.1	907	2.6	1114	2.6
A1564	M	6.76	13.1	42.1	11.3	49	21.4	35.4	940	3.5	1114	3.5
A1566	M	7.12	16.3	47.0	11.0	28	14.8	36.8	1009	1.8	1114	1.8
A1568	M	6.94	16.3	41.1	10.4	61	11.1	1043	1043	1.8	1114	1.8
A1570	M	7.14	11.6	41.6	10.4	39	11.1	37.8	916	1.4	1114	1.4
A1571	M	6.93	14.3	39.4	7.3	38	11.1	37.8	1071	2.7	1114	2.7
A1572	M	7.11	16.3	41.9	16.1	60	11.1	37.7	1108	1.1	1114	1.1
A1573	M	6.73	15.3	41.2	11.3	41	11.1	37.7	1052	3.3	1114	3.3
A1574	M	7.73	13.8	41.7	10.6	36	11.1	37.7	1046	2.9	1114	2.9
A1580	M	6.61	14.4	39.3	11.4	38	11.1	37.8	1134	1.0	1114	1.0
A1581	M	7.41	16.3	46.1	9.4	60	14.6	36.4	974	2.0	1114	2.0
A1582	F	7.46	17.1	43.9	14.6	47	10.7	37.3	902	1.5	1114	1.5
A1583	F	7.44	16.4	46.3	8.7	62	21.0	36.3	1072	2.3	1114	2.3
A1584	F	6.91	15.7	41.1	6.6	63	11.1	37.1	1077	3.3	1114	3.3
A1585	F	7.44	16.3	46.2	8.7	63	12.4	36.1	864	2.3	1114	2.3
A1586	F	7.80	13.8	43.3	8.7	60	12.4	37.8	1030	2.0	1114	2.0
A1587	F	7.41	16.3	46.3	9.4	60	11.1	37.8	1134	1.0	1114	1.0
A1588	F	6.81	13.6	41.1	11.8	62	21.9	37.1	896	2.8	1114	2.8
A1589	F	7.98	15.7	44.1	12.3	43	13.3	35.6	870	2.2	1114	2.2
A1590	F	6.97	16.1	44.5	9.3	64	23.3	36.2	1076	1.7	1114	1.7
A1591	F	7.34	16.3	43.2	10.2	39	21.3	37.7	821	1.7	1114	1.7

cmm = cubic millimeter
dl = deciliter
RBC = Red blood cells

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TABLE 3 Cont.

Group, R&R Number	Sex	Kwassiraffe		Lymphocytes		Mono. /100 WBC	Eosino. /100 WBC	Baso. /100 WBC	Erythro. /100 WBC	Other cells /100 WBC	Hypochro- mosis	Polychro- mosis	Aster- ogranules
		Mac-	Mac-	Neut.	Neut.								
5000 Rads:													
41323	M	14	0	83	1	0	0	1	1	0	0	0	0
41325	H	19	0	50	0	4	0	0	0	0	0	0	0
41327	H	17	0	76	1	4	0	0	0	0	0	0	0
41329	H	13	0	84	0	3	0	0	0	0	0	0	0
41331	H	10	0	88	0	2	0	1	0	0	0	0	0
41332	H	14	1	84	0	1	0	0	0	0	0	0	0
41336	H	14	0	83	1	3	0	0	0	0	0	0	0
41339	H	6	0	91	0	3	0	0	0	0	0	0	0
41340	H	12	0	83	0	3	0	0	0	0	0	0	0
41341	H	20	0	75	2	3	0	0	0	0	0	0	0
41344	F	17	0	76	2	3	0	0	0	0	0	0	0
41345	F	13	0	81	1	3	0	0	0	0	0	0	0
41348	F	24	0	68	4	4	0	0	0	0	0	0	0
41351	F	24	0	74	0	2	0	0	0	0	0	0	0
41353	F	18	0	78	2	2	0	0	0	0	0	0	0
41354	F	15	0	80	3	0	0	0	0	0	0	0	0
41355	F	19	1	77	2	1	0	0	0	0	0	0	0
41357	F	12	0	81	2	3	0	0	0	0	0	0	0
41358	F	19	0	76	1	2	0	0	0	0	0	0	0
41361	F	32	1	65	0	2	0	0	0	0	0	0	0
10,000 Rads:													
41363	H	12	0	82	3	2	0	0	0	0	0	0	0
41364	H	12	1	85	0	2	0	0	0	0	0	0	0
41366	H	11	2	71	1	1	0	0	0	0	0	0	0
41368	H	32	0	63	3	2	0	0	0	0	0	0	0
41370	H	14	0	86	1	3	0	0	0	0	0	0	0
41371	H	70	0	71	2	6	0	0	0	0	0	0	0
41372	H	16	1	79	2	2	0	0	0	0	0	0	0
41373	H	16	0	77	2	2	0	0	0	0	0	0	0
41376	H	13	0	62	2	4	0	0	0	0	0	0	0
41380	H	16	0	76	1	5	0	0	0	0	0	0	0
41382	F	18	0	80	0	2	0	0	0	0	0	0	0
41383	F	18	0	81	2	3	0	0	0	0	0	0	0
41384	F	13	2	79	3	1	0	0	0	0	0	0	0
41385	F	20	0	73	4	4	0	0	0	0	0	0	0
41386	F	11	0	63	1	2	0	0	0	0	0	0	0
41392	F	26	1	70	1	2	0	0	0	0	0	0	0
41393	F	19	0	63	0	3	0	0	0	0	0	0	0
41395	F	18	1	75	2	4	0	0	0	0	0	0	0
41396	F	17	0	81	1	3	0	0	0	0	0	0	0
41399	F	16	0	78	1	4	0	0	0	0	0	0	0

*Codes: 0 - Within normal limits
1 - 3-25% cells affected
2 - 26-50% cells affected
3 - 51-75% cells affected
4 - 76-100% cells affected

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TABLE 6 Individual Hematological Values - 13 Weeks

Group, Batch, Number	Sex	Erythrocytes 10^6/mm^3	Hemoglobin mg/dl	Hematocrit %	Lymphocytes $10^3/\text{mm}^3$	MCV μl	MCH mcg	MCHC % g/dl	Plates $10^3/\text{mm}^3$	Red blood cells /100,000
0_PEM (Control)										
41442	M	6.17	15.8	47.6	8.3	8.3	39	19.3	33.2	713
41444	M	6.11	16.7	47.8	7.7	7.7	59	20.6	34.7	362
41449	M	7.43	16.6	46.6	8.6	8.6	61	21.4	35.6	494
41553	M	7.77	16.9	46.6	8.4	8.4	60	20.6	34.3	34
41554	M	8.23	16.5	47.6	8.0	8.0	58	20.0	34.7	628
41556	M	7.94	16.1	46.5	13.7	13.7	59	20.3	34.6	648
41557	M	7.81	16.5	46.7	12.3	12.3	60	21.3	35.4	481
41559	M	8.05	16.4	47.2	11.7	11.7	59	20.4	34.7	664
41560	M	8.33	17.7	51.9	8.5	8.5	61	20.8	34.1	577
41461	M	7.42	16.7	45.2	8.9	8.9	61	21.8	35.8	634
41463	F	8.09	16.6	48.7	6.3	6.3	60	20.5	36.1	767
41466	F	7.49	15.4	45.2	6.7	6.7	60	20.6	34.1	673
41463	F	7.83	16.7	48.1	7.2	7.2	61	21.3	34.7	672
41469	F	7.06	15.8	46.5	5.5	5.5	59	20.1	34.0	614
41473	F	7.76	16.4	48.1	5.9	5.9	62	21.1	34.1	643
41475	F	7.64	16.2	46.9	7.1	7.1	60	20.7	34.3	795
41476	F	7.72	16.4	47.6	5.6	5.6	62	21.7	34.3	643
41477	F	7.26	15.4	43.9	5.9	5.9	60	21.2	35.1	437
41480	F	7.12	15.3	46.3	4.2	4.2	62	21.5	34.5	638
41481	F	7.14	14.9	47.7	5.0	5.0	60	20.9	34.9	616
1000_PEM										
41462	M	8.03	16.5	46.5	7.9	7.9	60	20.2	34.3	396
41464	M	7.78	15.0	44.2	17.7	17	19.3	21.2	37.0	1.4
41461	M	7.81	13.3	42.3	9.1	9.1	56	12.6	34.3	462
41486	M	7.67	14.2	42.2	7.5	7.5	55	15.1	33.4	727
41468	M	7.15	16.3	49.1	6.7	6.7	61	21.3	35.3	605
41490	M	7.78	16.6	49.1	7.2	7.2	61	21.3	35.6	639
41491	M	7.37	15.7	45.0	6.5	6.5	59	20.7	34.7	647
41493	M	7.84	13.6	46.3	6.3	6.3	59	20.7	34.0	676
41497	M	7.34	14.8	43.7	11.1	11.1	56	19.6	34.1	149
41498	M	7.85	13.6	43.2	6.6	6.6	56	19.9	34.5	609
41502	F	7.37	15.3	45.8	6.8	6.8	62	20.7	34.4	368
41504	F	6.66	17.5	19.4	16.7	16.7	59	20.3	34.3	317
41506	F	7.42	16.2	47.2	8.2	8.2	64	21.8	34.3	462
41507	F	7.37	12.8	48.3	4.0	4.0	61	21.2	34.6	622
41512	F	7.68	16.9	45.8	5.8	5.8	62	21.6	34.9	613
41514	F	7.68	16.2	46.3	5.1	5.1	60	21.1	35.0	620
41516	F	7.87	16.1	47.6	6.8	6.8	61	20.6	33.7	697
41519	F	7.66	15.6	45.2	5.6	5.6	59	20.5	34.5	531
41520	F	7.06	13.1	43.1	4.4	4.4	61	21.3	35.0	606
41521	F	7.17	15.8	46.1	5.9	5.9	61	20.7	34.6	344

cmm = cubic millimeter

dl = deciliter

RBC = Red blood cells

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TABLE B. Cont.

Group, Cat. Number	Sex	Hematocrit % 100 WBC	Hemo- globin mg. 100 WBC	Lympho- cytes /100 WBC	Eosino- philic cells /100 WBC	Mono- cytes /100 WBC	Ker- atocytes /100 WBC	Other white cells /100 WBC	Hypo- chromia scale		Reticulo- cytes %	Auto- cytosis %
									0	1		
0 Ppm. (Control):												
4.14647	M	20	0	76	1	1	0	0	0	0	0	0
4.14644	M	19	0	89	0	1	0	0	0	0	0	0
4.14649	N	11	0	83	1	5	0	0	0	0	0	0
4.14533	M	12	0	81	1	6	0	0	0	0	0	0
4.14534	M	11	0	89	0	0	0	0	0	0	0	0
4.14536	M	63	0	34	0	1	0	0	0	0	0	0
4.14537	M	12	0	81	0	7	0	0	0	0	0	0
4.14539	M	16	0	69	3	1	0	0	0	0	0	0
4.14640	M	15	0	77	3	1	0	0	0	0	0	0
4.14641	M	11	0	83	2	4	0	0	0	0	0	0
4.14643	F	20	1	76	0	3	0	0	0	0	0	0
4.14646	F	13	0	86	3	3	0	0	0	0	0	0
4.14647	F	27	0	66	3	4	0	0	0	0	0	0
4.14649	F	16	0	77	3	2	0	0	0	0	0	0
4.14713	F	8	0	86	0	4	0	0	0	0	0	0
4.14715	F	18	0	74	1	7	0	0	0	0	0	0
4.14716	F	15	0	61	2	2	0	0	0	0	0	0
4.14717	F	6	0	90	1	3	0	0	0	0	0	0
4.14801	F	7	0	86	2	3	0	0	0	0	0	0
4.14831	F	13	0	62	3	2	0	0	0	0	0	0
1000 Ppm.:												
4.14632	M	11	1	32	0	6	0	0	0	0	0	0
4.14636	M	18	0	76	3	3	0	0	0	0	0	0
4.14675	M	11	0	86	2	3	0	0	0	0	0	0
4.14676	M	19	0	83	0	5	0	0	0	0	0	0
4.14679	M	14	0	85	0	1	0	0	0	0	0	0
4.14790	M	19	0	79	0	4	0	0	0	0	0	0
4.14791	M	12	0	86	0	6	0	0	0	0	0	0
4.14795	H	15	1	76	5	3	0	0	0	0	0	0
4.14797	M	14	0	83	0	3	0	0	0	0	0	0
4.15190	M	15	0	79	7	4	0	0	0	0	0	0
4.17502	F	10	0	87	0	3	0	0	0	0	0	0
4.17504	F	64	1	74	0	7	0	0	0	0	0	0
4.13306	F	11	0	86	1	1	0	0	0	0	0	0
4.13097	F	9	0	87	2	2	0	0	0	0	0	0
4.12312	F	14	0	88	3	2	0	0	0	0	0	0
4.13134	F	13	0	78	1	4	0	0	0	0	0	0
4.13138	F	7	0	88	3	2	0	0	0	0	0	0
4.13219	F	20	0	74	3	3	0	0	0	0	0	0
4.13220	F	17	1	85	3	0	0	0	0	0	0	0
4.13221	F	17	1	79	2	3	0	0	0	0	0	0

*Cytosis 0 = Within normal limits

WBC = White blood cells - Leucocytes

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TABLE 8. Cont.

Group, Cat Number	KwK	Neutrophils $10^6/\text{cmm}^3$	Monocytes $10^3/\text{cmm}^3$	Hematocrit %	Leucocytes $10^3/\text{cmm}^3$	HCY μM	Hb g/dl	HbC g/dl	Plates $10^3/\text{cmm}^3$	Microglobulin $/100 \text{ sec}^1$
3000 ppm^a										
41517	X	8.18	16.3	45.7	6.3	60	10.2	21.3	676	4.4
41520	X	8.32	16.3	49.8	10.4	60	10.1	33.3	634	2.8
41522	X	7.82	15.3	46.3	7.8	55	10.3	34.9	600	2.1
41528	X	7.43	15.9	45.5	6.1	60	10.8	36.9	759	2.4
41535	X	7.74	15.3	43.9	6.3	59	10.9	32.9	679	4.3
41536	X	7.98	16.0	47.5	10.3	60	10.1	33.7	716	2.3
41538	X	6.01	15.2	47.3	8.7	59	19.7	33.7	643	3.7
41539	X	6.06	15.6	46.9	9.3	58	19.3	35.0	677	4.4
41540	X	7.87	16.4	48.1	7.6	61	11.0	36.3	661	2.3
41541	X	8.13	17.0	49.1	8.3	60	10.4	34.4	639	2.8
41542	F	7.41	15.3	45.0	11.4	61	20.7	34.4	704	2.4
41543	F	7.73	16.2	46.6	6.8	60	21.0	34.8	606	1.9
41544	F	7.91	16.3	46.3	5.1	61	20.9	34.2	588	3.0
41545	F	8.18	17.1	49.8	5.0	61	20.9	34.3	622	1.7
41552	F	7.87	15.6	45.8	8.1	58	19.8	34.1	724	2.3
41553	F	7.52	15.4	45.3	6.2	60	20.3	34.0	642	2.4
41556	F	7.66	15.5	45.7	7.4	60	20.2	33.9	676	4.3
41557	F	7.84	16.6	48.7	4.2	62	21.2	34.1	623	2.4
41559	X	7.73	16.9	44.0	8.6	61	20.6	33.7	664	2.3
41561	F	7.43	15.9	46.4	4.1	63	21.4	34.3	710	2.3
10,000 ppm^a										
41562	X	7.36	15.6	43.6	10.3	61	20.6	34.4	677	2.2
41563	X	7.33	15.4	45.0	12.2	52	21.2	34.3	544	3.0
41564	X	7.46	15.3	43.1	10.7	59	19.9	31.8	798	2.1
41565	X	7.81	15.3	45.3	11.8	58	19.8	34.1	646	2.7
41566	X	7.96	16.3	49.1	7.6	62	21.0	34.0	703	1.8
41568	X	7.89	16.1	46.6	9.1	59	20.4	34.5	624	1.0
41570	X	7.13	17.1	43.2	7.2	58	20.1	34.3	655	3.3
41571	X	8.06	16.2	47.9	9.9	60	20.4	33.8	692	2.9
41576	X	7.48	15.7	45.4	16.3	39	20.4	36.4	662	2.7
41580	X	7.92	15.3	46.4	10.2	54	19.3	34.5	735	2.1
41581	F	7.51	16.2	46.0	8.4	61	21.4	35.3	722	1.5
41583	F	7.33	16.9	46.3	6.9	63	21.8	34.4	647	1.7
41586	X	8.68	16.3	46.6	6.2	61	21.2	35.0	624	2.7
41589	X	7.39	15.7	45.0	8.2	59	20.7	34.7	707	2.0
41590	F	7.63	15.4	45.3	7.7	60	20.2	33.8	707	4.6
41591	F	5.64	11.9	36.8	21.6	62	21.1	34.2	804	8.7
41594	F	7.52	15.3	45.4	14.6	60	20.6	34.1	581	4.7
41595	F	7.81	16.3	48.7	11.1	62	21.1	33.3	639	2.4
41596	F	7.73	15.4	46.9	7.8	62	21.6	34.7	707	2.9
41600	F	7.88	16.4	48.0	7.5	61	20.8	34.2	644	2.4

^acmm = cubic millimeter
dl = deciliter
HbC = Red blood cells

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TABLE 8. Continued
Individual Hematological Values - 13 Weeks

Group, Cat. Number	Sex /100 WBC	Neutrophils 54% /100 WBC	Monocytes 1% /100 WBC	Lympho- cytes 15% /100 WBC	Eosino- philic cells 0% /100 WBC	Baso- philic cells 0% /100 WBC	Tricho- blasts 0% /100 WBC	Other cells 0% /100 WBC	Polychro- mophilic cells 0% /100 WBC	Hypochro- mophilic cells 0% /100 WBC	Alder- ocytosis 0% /100 WBC
3000 ppm											
41527	M	10	0	65	1	4	0	0	0	0	0
41528	H	19	0	75	0	6	0	0	0	0	0
41529	H	14	0	63	0	3	0	0	0	0	0
41530	H	6	0	91	0	1	0	0	0	0	0
41531	N	15	0	61	3	1	0	0	0	0	0
41532	H	13	0	65	2	0	0	0	0	0	0
41533	H	9	0	67	1	3	0	0	0	0	0
41534	H	17	1	79	0	3	0	0	0	0	0
41535	H	20	0	73	3	4	0	0	0	0	0
41536	H	15	2	79	1	3	0	0	0	0	0
41537	F	20	0	91	0	1	0	0	0	0	0
41538	F	16	0	73	2	3	0	0	0	0	0
41539	H	13	0	63	0	1	0	0	0	0	0
41540	H	20	0	61	1	0	0	0	0	0	0
41541	H	15	2	82	2	3	0	0	0	0	0
41542	F	8	0	78	1	2	0	0	0	0	0
41543	F	20	0	73	2	3	0	0	0	0	0
41544	F	16	0	63	0	1	0	0	0	0	0
41551	F	37	1	61	1	0	0	0	0	0	0
41552	F	12	1	82	2	3	0	0	0	0	0
41553	F	19	0	78	1	2	0	0	0	0	0
41556	F	16	0	79	1	4	0	0	0	0	0
41557	F	13	0	65	0	2	0	0	0	0	0
41559	F	24	0	72	2	3	0	0	0	0	0
41561	F	23	1	69	5	7	0	0	0	0	0
10,000 ppm											
41562	H	17	0	79	2	2	0	0	0	0	0
41563	H	28	1	71	1	3	0	0	0	0	0
41565	H	23	0	72	1	1	0	0	0	0	0
41566	H	9	1	61	1	2	0	0	0	0	0
41568	H	22	0	76	0	2	0	0	0	0	0
41570	H	44	2	60	0	2	0	0	0	0	0
41571	H	13	1	76	2	6	0	0	0	0	0
41572	H	23	1	71	2	1	0	0	0	0	0
41576	H	13	0	84	0	3	0	0	0	0	0
41580	H	24	0	71	3	2	0	0	0	0	0
41582	F	9	0	66	2	3	0	0	0	0	0
41583	F	13**	1**	61**	2**	3**	0	0	0	0	0
41586	F	16	0	61	1	0	0	0	0	0	0
41589	F	11	1	69	1	2	0	0	0	0	0
41593	F	38	3	56	1	2	0	0	0	0	0
41595	F	11	0	84	4	1	0	0	0	0	0
41596	F	16	0	61	1	0	0	0	0	0	0
41600	F	23	1	73	1	2	0	0	0	0	0
		0	91	0	7	0	0	0	0	0	0

*Codes: 0 = within normal limits,
1 = 5-33% cells affected
2 = 34-50% cells affected
3 = 51-70% cells affected
4 = 71-100% cells affected.

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WBC = White blood cells - leukocytes
except determination

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TABLE 9.
MALES: Means and Significance of Biochemical Values

Biochemistry	Study Week	0 ppm (Control)	1000 ppm	3000 ppm	10,000 ppm
Glucose mg/dl	6	94	96	81	54*
	13	93	100	82	78*
BUN mg/dl	6	15.2	15.1*	16.3	21.2
	13	19.6	17.0	17.0	19.8
SGOT IU/l	6	109	89	111	110
	13	131	117	106*	127
Alkaline Phosphatase IU/l	6	105	111	125	133*
	13	72	72	83	103*
Albumin g/dl	6	3.3	3.3	3.3	3.2
	13	3.3	3.2	3.7**	3.8**
SGPT IU/l	6	35	36	35	39
	13	34	33	40	40
Total Protein g/dl	6	6.4	6.3	6.4	5.8**
	13	7.9	7.2**	7.9	7.5
Calcium mg/dl	6	10.8	10.8	10.9	10.1**
	13	9.7	9.7	10.2*	10.1
Cholesterol mg/dl	6	68	59	63	59
	13	78	55**	66	70
Total Bilirubin mg/dl	6	0.2	0.1	0.1**	0.2*
	13	0.2	0.1*	0.1**	0.1**
Creatinine mg/dl	6	0.6	0.6	0.6	0.7
	13	0.6	0.6	0.6	0.7
LDE IU/l	6	1039	696	1106	751
	13	1332	1220	1066	1074
Phosphorus mg/dl	6	7.7	8.2	7.3	6.2
	13	7.7	8.2	7.3	6.2
Sodium meq/l	6	144	144	147**	143
	13	150	149	152	153*
Potassium meq/l	6	3.9	6.2	6.6**	3.9
	13	3.8	3.7	6.1	6.3*
Chloride meq/l	6	102	103	103	100
	13	105	106	107	108
Globulin g/dl	6	3.1	2.8	3.2	2.5**
	13	4.6	4.0**	4.3	3.7*

*Not determined

Significantly different from Control group mean, $p < 0.05$ *Significantly different from Control group mean, $p < 0.01$

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TABLE 9. Cont. FEMALE: Means and Significance and Biochemical Values

Biochemistry	Study Week	0 ppm (Control)	1000 ppm	5000 ppm	10,000 ppm
Glucose mg/dl	6 13	106 107	113 122**	91** 80**	93** 69**
BUN mg/dl	6 13	22.0 19.8	23.4 22.2	17.3 20.3	20.6 14.3
SGOT IU/l	6 13	95 122	80** 127	106 124	105 118
Alkaline Phosphatase IU/l	6 13	39 33	72 53	63 44	83** 77**
Albumin g/dl	6 13	3.5 3.7	3.5 3.6	3.5 3.9*	3.5 3.9
SGPT IU/l	6 13	32 32	32 30	31 33	35 32
Total Protein g/dl	6 13	6.3 6.0	6.3 6.3	6.5 8.0	6.2 7.8
Calcium mg/dl	6 13	11.1 10.0	10.4** 9.9	10.5** 10.8**	10.4** 10.0
Cholesterol mg/dl	6 13	76 85	75 79	76 64*	71 93
Total Bilirubin mg/dl	6 13	0.1 0.1	0.2** 0.2**	0.1** 0.1**	0.2** 0.1**
Creatinine mg/dl	6 13	0.6 0.6	2.6 2.6	0.7 0.7	0.7*
Lipop. IU/l	6 13	355 1288	412** 1421	1123** 1384	760 918**
Phosphorus mg/dl	6 13	3.7 3.7	3.6 3.6	7.0** 7.0**	7.2**
Sodium meq/l	6 13	143 148	143 148	153 151**	146** 133**
Potassium meq/l	6 13	6.0 5.7	6.3 6.4	6.3 5.8	6.0 5.7
Chloride meq/l	6 13	105 109	105 109	110 110	106 109
Globulin g/dl	6 13	3.0 4.4	2.3 2.6	0.0 0.1	2.8 3.9

*Not determined

Significantly different from Control group $p \leq 0.05$ *Significantly different from Control group $p \leq 0.01$

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TABLE 10 Individual Biochemical Values - Resolution

Group, Cat. Number	Glu mm mg/dl	BUN mg/dl	BUN: crea ratio	Alkaline Phos. ECOT 10/1			Total Pro- tein g/dl			Col- ester- olein mg/dl			Creat- inine mg/dl			Chlor- ide meq/l			
				Albumin g/dl	Glob g/dl	SGPT 10U/l	Total Pro- tein g/dl	Keto- nol g/dl	Chlor- ide meq/l	Total phos- phorus mg/dl	Lacto- tate mg/dl	Sodium meq/l	Chlor- ide meq/l	Total potas- sium meq/l	Chlor- ide meq/l	Total potas- sium meq/l	Chlor- ide meq/l		
R-21042	M	106	36.2	111	197	3.1	26	5.1	9.6	70	6.2	641	10.3	140	7.1	105	3.0		
R-21048	M	99	36.9	140	190	3.1	39	5.1	9.3	39	0.2	0.4	1191	11.2	126	6.7	104	7.0	
R-21050	M	104	26.8	116	231	3.2	32	5.3	9.6	61	0.2	0.4	656	9.6	140	6.5	103	7.1	
R-21072	M	68	24.3	QES	QES	3.3	79	6.1	QES	116	QES	QES	13.1	QES	QES	QES	QES	2.6	
R-21083	M	101	37.9	112	173	3.2	31	5.3	10.0	64	0.2	0.4	964	10.7	143	7.4	106	7.1	
R-21090	M	116	42.8	335	232	3.1	24	5.3	9.7	53	0.2	0.4	1002	9.6	140	6.3	102	7.0	
R-21106	M	92	16.5	107	109	3.2	26	5.1	9.3	89	0.2	0.6	921	10.1	141	6.4	103	7.0	
R-21121	M	92	16.9	116	161	3.2	76	5.4	10.0	77	0.2	0.4	1186	9.6	138	6.3	107	7.1	
R-21137	M	91	18.3	132	152	3.1	21	5.1	9.6	69	0.2	0.4	1624	9.1	147	6.4	105	7.0	
R-21150	M	96	13.4	105	149	3.1	24	5.1	10.0	64	0.2	0.4	731	10.1	139	5.6	104	7.0	
R-21163	F	81	15.6	82	105	3.2	22	5.6	10.0	96	0.2	0.4	QES	260	9.2	QES	QES	2.2	
R-21184	F	103	25.3	109	147	3.3	22	5.4	10.1	95	0.1	0.4	QES	710	9.6	QES	QES	2.1	
R-21201	F	95	16.2	102	179	3.1	22	5.0	9.5	64	0.2	0.4	613	9.4	136	6.5	106	7.0	
R-21210	F	116	17.7	76	163	3.1	23	5.0	9.6	68	0.2	0.4	QES	306	9.3	QES	QES	1.8	
R-21211	F	99	16.5	75	143	3.1	24	5.1	9.9	74	0.2	0.4	417	8.9	139	6.1	104	7.0	
R-21215	F	96	23.3	117	146	3.4	26	5.4	9.9	63	0.3	0.4	393	10.0	138	7.3	106	7.1	
R-21237	F	115	18.3	93	150	3.2	23	5.2	10.0	70	0.2	0.4	QES	543	9.9	136	6.4	104	7.0
R-21251	F	160	35.2	106	245	3.1	22	5.1	9.4	84	0.2	0.5	507	9.6	126	6.3	105	7.0	
R-21260	F	99	21.6	99	135	3.1	20	5.1	9.8	89	0.2	0.4	704	9.7	137	7.0	104	7.0	
R-21262	F	116	23.1	104	131	3.4	21	5.4	9.9	65	0.2	0.2	625	9.0	QES	QES	QES	2.0	

QES - Quantity not sufficient

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TABLE II. Individual Biochemical Values - 6 Weeks

Group, Rat Number	Sex	Alkalines			Albumin mg/dl	Globulin mg/dl	Total Pro- tein mg/dl	Cal- cium mg/dl	Choles- terol mg/dl	Total Biliru- bin mg/dl	Creatine kinase mg/dl	Potas- sium meq/l	Chlor- ide meq/l	Glo- bulin g/dl
		Glu- cone mg/dl	BUN mg/dl	ECDF mg/dl										
D EPPS (Continued):														
41646	M	90	17.4	508	625	3.7	33	6.4	7.7	.66	0.7	963	3.6	103
41648	M	98	18.7	115	93	3.3	35	6.7	10.9	.73	0.3	1362	3.2	101
41649	M	88	13.6	87	115	3.2	42	6.2	10.9	.77	0.2	726	3.4	100
41651	M	91	12.3	107	68	3.3	36	6.3	11.1	.61	0.2	143	3.5	103
41654	M	89	15.5	128	139	3.4	34	6.9	10.7	.54	0.2	1676	3.5	102
41657	M	86	15.0	162	90	3.3	35	6.1	10.6	.60	0.3	1753	3.4	103
41658	M	107	18.1	85	94	3.3	35	6.2	11.1	.80	0.7	143	2.9	103
41659	M	95	15.3	124	73	3.3	39	6.0	10.7	.71	0.2	1364	3.9	102
41660	M	81	10.9	109	90	3.3	31	6.2	10.9	.57	0.2	797	2.9	103
41661	M	113	16.2	81	124	3.2	34	6.5	10.6	.64	0.2	142	5.6	98
41662	F	98	18.1	85	65	3.4	31	6.3	11.0	.87	0.3	756	3.8	105
41663	F	108	23.5	109	79	3.3	36	7.1	11.6	.97	0.2	734	3.7	108
41664	F	116	18.2	91	53	3.2	30	6.0	10.6	.74	0.2	858	3.9	106
41665	F	126	19.4	116	70	3.3	31	6.3	11.0	.96	0.2	1313	3.8	105
41666	F	107	13.2	73	53	3.6	34	6.2	11.1	.90	0.3	664	3.7	104
41667	F	99	30.1	82	45	3.2	34	6.7	10.9	.77	0.2	760	3.2	104
41668	F	100	35.6	89	51	3.2	26	5.9	10.7	.61	0.3	812	3.7	107
41669	F	115	20.5	121	47	3.6	25	6.3	10.8	.83	0.3	1371	3.1	104
41671	F	96	19.2	79	69	3.4	30	6.6	11.2	.68	0.2	533	3.2	102
41674	F	98	21.6	102	56	3.7	41	6.8	11.3	.55	0.2	721	2.6	106
1000 ppm:														
41683	M	119	22.7	72	164	3.6	36	6.7	10.8	.53	0.2	667	3.1	104
41686	H	86	21.1	86	110	3.7	36	6.9	10.4	.70	0.2	563	2.7	101
41687	H	92	18.2	96	74	3.1	34	6.8	10.6	.68	0.2	868	3.0	104
41688	H	86	16.9	83	107	3.1	34	6.0	10.9	.61	0.2	648	3.7	104
41689	H	98	19.2	79	127	3.6	31	6.1	11.1	.74	0.2	143	3.1	104
41691	H	101	21.4	83	111	3.3	36	6.0	10.5	.39	0.2	149	3.1	104
41693	H	98	15.4	68	34	3.0	28	5.4	10.9	.21	0.2	131	3.6	106
41696	H	75	17.2	130	67	3.2	39	6.3	10.4	.61	0.2	429	3.9	107
41699	H	103	17.3	80	107	3.1	44	5.9	10.6	.37	0.2	133	3.2	102
41700	H	99	15.2	93	126	3.2	37	5.7	10.0	.55	0.2	717	3.9	102
41702	H	124	29.9	63	85	3.3	26	6.1	9.5	.95	0.2	269	3.7	106
41703	H	103	21.2	86	66	3.4	30	6.4	10.4	.69	0.1	524	3.0	104
41706	H	105	25.6	71	67	3.3	31	6.9	10.8	.69	0.1	213	3.0	109
41706	H	113	21.7	82	126	3.3	46	6.6	9.7	.69	0.2	326	3.5	102
41710	H	116	13.4	73	64	1.2	17	6.3	10.1	.81	0.1	279	3.1	106
41711	H	110	16.2	96	78	3.9	39	6.1	11.5	.85	0.2	638	3.9	104
41714	H	95	17.1	90	61	3.3	23	5.4	10.1	.79	0.2	213	3.0	101
41715	H	96	15.7	77	55	3.3	26	5.9	10.4	.56	0.2	466	2.5	107
41717	H	105	25.4	82	43	3.6	45	6.9	10.4	.72	0.2	384	3.0	109
41718	H	130	61.2	74	61	3.6	29	7.1	10.7	.66	0.2	241	3.7	107

*Not done at this interval

**Repeat determination

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TABLE II. Cont.

Individual biochemical values - 6 weeks

Group/ Rat Number	Sex	Glu- cose mg/dl	BUN mg/dl	SCOTT tuff mg/dl	Albu- min g/dl	Pro- tein g/dl	Creat- inine mg/dl	Total		Chlor- ide mmol/l	Potas- sium mmol/l	Chlor- ide mmol/l	Glo- bulin g/dl
								Cal- cium mmol/l	Total protein mg/dl				
5000 ppm													
41223	M	81	14.3	107	180	3.3	23	6.4	10.4	62	0.1	792	14.8
41225	M	104	16.8	131	110	3.1	33	6.0	10.4	69	0.1	1637	14.2
41227	M	78	12.3	132	196	3.4	43	7.2	11.2	71	0.1	1164	14.9
41228	M	90	14.3	92	116	3.2	36	6.2	10.7	56	0.1	105	14.8
41231	M	91	19.3	185	99	3.2	38	6.2	16.4	59	0.1	3895	12.9
41233	M	69	16.3	127	124	3.4	41	6.4	11.1	70	0.1	1438	14.5
41236	M	76	17.3	106	178	3.1	31	6.2	11.0	55	0.1	1028	14.3
41239	M	75	17.8	129	136	3.4	37	6.4	10.7	52	0.1	1856	14.7
41240	M	43	19.3	82	120	3.2	29	6.1	10.7	53	0.1	738	14.6
41241	M	71	12.3	113	105	3.4	44	7.1	12.1	78	0.1	816	13.2
41244	F	97	18.7	98	71	3.4	32	6.2	10.3	63	0.2	1174	14.4
41245	F	78	20.7	93	68	2.3	23	6.3	10.2	70	0.1	1094	14.3
41246	F	91	14.2	96	73	3.5	31	6.5	10.6	66	0.1	138	14.4
41251	F	99	15.9	127	37	3.6	33	6.6	10.6	92	0.1	1349	14.3
41253	F	82	17.4	121	63	3.6	32	6.7	11.2	72	0.1	1174	14.5
41254	F	89	13.2	63	46	3.3	23	6.1	9.8	68	0.1	771	14.4
41255	F	96	16.7	119	31	3.6	23	6.6	10.7	69	0.1	1396	14.3
41257	F	89	21.0	123	79	3.6	37	7.0	11.1	91	0.2	1394	14.3
41258	F	93	15.6	137	57	3.4	27	6.6	10.6	78	0.1	759	14.2
41261	F	96	20.3	123	66	3.4	31	6.4	10.3	65	0.1	1505	14.6
10,000 ppm													
41263	M	66	16.3	179	152	3.4	31	6.0	10.0	59	0.2	1171	14.3
41264	M	102	14.3	93	143	3.1	39	5.7	10.3	70	0.1	446	14.6
41266	M	87	16.8	91	114	3.3	38	6.0	10.1	51	0.1	677	14.5
41268	M	81	18.8	106	124	3.4	40	5.8	10.6	73	0.2	683	14.3
41270	M	86	16.3	73	171	3.3	13	6.1	10.0	64	0.1	1090	14.3
41271	M	78	16.3	106	105	3.3	38	5.5	10.1	56	0.2	698	14.1
41272	M	86	19.2	118	142	3.3	33	6.0	9.8	69	0.2	1043	14.3
41273	M	83	15.8	112	172	3.2	37	5.5	10.5	73	0.2	1163	14.3
41275	M	73	16.2	110	176	3.1	21	5.6	9.7	65	0.2	1016	14.5
41276	M	76	16.3	68	114	3.4	40	5.6	10.2	57	0.2	438	14.4
41282	F	95	17.2	94	66	3.6	31	6.1	10.4	64	0.1	104	14.4
41283	F	92	20.7	111	102	3.4	29	6.0	10.0	61	0.1	910	14.3
41284	F	98	21.7	101	105	3.6	36	6.4	10.3	63	0.1	740	14.3
41285	F	89	16.8	112	67	3.6	73	6.6	10.8	67	0.2	1018	14.2
41286	F	85	20.7	104	60	3.5	39	6.1	10.1	67	0.1	789	14.0
41287	F	92	31.8	119	68	3.5	31	6.1	10.4	64	0.1	365	14.4
41288	F	88	19.7	110	90	3.5	39	6.1	10.0	56	0.1	795	14.3
41289	F	84	16.6	104	69	3.5	33	6.4	10.4	59	0.1	745	14.0
41290	F	116	16.1	100	63	3.4	36	6.2	10.6	70	0.2	490	14.1
41292	F	96	23.1	96	107	3.6	36	6.5	10.3	70	0.2	916	14.2

*Most drove at same interval

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TABLE II.
Individual Biochemical Values - 14 Weeks

Group, Cat. Number	Glu- cose mg/dl	BUN mg/dl	BCCR mg/dl	Albu- min g/dl	SGPT U/l	Total Pro- tein g/dl	Cal- cium mg/dl	Total Chlor- ide meq/l	Potas- sium meq/l	Phos- phate mg/dl	Sodium meq/l	Chlo- rinate meq/l	Glu- culin x/dl
<u>B.D.E. (Control)</u>													
44642	M	79	16.9	133	61	9.3	30	8.0	3.4	57	0.2	0.5	1417
44644	M	92	18.1	132	73	3.4	35	7.3	107	0.1	0.3	1319	8.2
44649	M	99	15.7	116	77	3.4	36	7.3	9.8	0.2	0.4	1361	7.3
44653	M	81	14.4	99	63	2.2	31	7.6	2.3	6.1	0.1	0.3	1351
44654	M	83	17.5	165	53	3.3	34	8.2	10.0	4.5	0.2	0.5	1208
44656	M	88	20.2	127	60	3.3	33	9.0	9.8	81	0.2	0.7	1307
44657	M	93	19.8	168	65	3.4	37	7.2	10.0	81	0.3	0.6	2021
44659	M	88	18.8	122	54	3.3	32	7.3	9.8	90	0.2	0.6	1163
44660	M	76	18.6	143	71	3.5	37	8.6	9.5	56	0.3	0.7	1579
44661	M	113	17.7	110	73	3.3	37	7.7	9.9	90	0.3	0.6	1419
44662	F	110	26.1	133	31	3.4	32	7.9	103	0.2	0.3	1332	5.2
44666	F	102	16.0	112	56	3.9	29	9.2	10.4	103	0.2	0.3	1241
44667	F	103	24.6	130	36	3.7	37	6.7	10.1	92	0.2	0.3	1393
44669	F	123	22.9	169	22	4.0	52	6.1	10.3	89	0.2	0.7	1699
44673	F	105	15.3	104	50	3.5	31	6.1	10.6	46	0.2	0.6	1113
44675	F	85	22.4	111	38	4.6	31	8.3	10.2	64	0.2	0.7	1179
44676	F	124	16.3	103	21	3.6	26	7.8	9.9	105	0.2	0.6	1137
44677	F	112	16.3	129	25	3.6	23	7.3	10.1	86	0.2	0.6	1273
44680	F	97	18.2	114	24	3.3	30	6.8	9.2	67	0.2	0.6	1263
44681	F	104	18.7	112	26	3.6	26	7.8	9.4	87	0.2	0.6	1112
<u>1980 E.P.M.</u>													
44683	M	96	17.1	126	87	3.4	33	7.2	10.1	73	0.1	0.6	1349
44684	M	131	20.3	120	60	3.3	36	7.4	9.3	64	0.1	0.7	1164
44685	M	107	14.1	103	80	1.4	41	6.4	10.1	49	0.1	0.3	1104
44686	M	94	15.4	113	34	3.1	20	7.3	9.5	60	0.2	0.5	1223
44687	M	96	12.3	104	29	3.2	37	7.7	9.8	71	0.2	0.4	1420
44690	M	76	13.1	113	69	3.3	31	7.3	9.7	60	0.1	0.5	1231
44691	M	97	17.7	123	21	2.1	48	7.5	9.2	24	0.2	0.6	1363
44693	M	73	17.7	110	48	3.1	33	6.9	7.6	20	0.3	0.4	1233
44692	M	110	16.3	87	76	1.1	33	7.6	10.0	48	0.2	0.3	1170
44698	M	109	17.6	123	91	3.1	36	6.3	9.4	65	0.1	0.6	1298
44700	F	107	18.1	102	77	3.2	38	7.1	9.8	63	0.2	0.5	1196
44702	F	67	14.3	163	93	1.4	29	6.6	7.3	48	0.1	0.6	1197
44704	F	76	26.3	103	21	3.5	39	6.9	9.8	81	0.2	0.7	1338
44705	F	63	27.1	37	39	3.6	30	6.0	9.8	67	0.1	0.6	1674
44709	F	69	21.3	169	24	3.6	36	8.1	10.0	98	0.2	0.5	1108
44712	F	98	17.7	138	41	3.2	31	8.5	10.6	92	0.1	0.6	1262
44714	F	73	20.7	81	36	4.3	34	7.6	9.8	107	0.2	0.5	1278
44715	F	84	30.3	134	59	4.0	38	8.4	10.2	107	0.1	0.7	1437
44718	F	91	17.3	113	11	3.2	36	7.7	9.8	82	0.2	0.5	1268
44720	F	70	20.1	113	21	3.3	33	8.1	10.3	83	0.2	0.6	1770
44721	F	104	17.8	113	21	3.3	33	8.1	10.3	83	0.2	0.6	1598

*Values not included in statistical analysis, sample considered不够

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TABLE 13.

MEANS: Means and Significance of Urinanalysis Values

Urinalysis	Study Week	0 ppm (Control)	1000 ppm	3000 ppm	10,000 ppm
Specific Gravity ^a	6	1.035	1.035	1.035	1.035
	13	1.034	1.033	1.033	1.033
Volume ml	6	3.0	2.5	1.1	3.1
	13	1.1	3.6	1.3	2.6
pH	6	8	6	6	6
	13	7	6	6	6

^aThese means include values with > signs. See individual data for the number of such values included.

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TABLE 13, Cont.

PENALTY: Means and Significance of Urinalysis Values

Urinalysis	Study Week	0 ppm (Control)	1000 ppm	5000 ppm	10,000 ppm
Specific Gravity ^a	6	1.035	1.035	1.035	1.035
6	13	1.035	1.035	1.035	1.035
Volume ml	6	1.2	1.2	0.8	1.8
6	13	1.2 ^b	1.1 ^b	1.1 ^b	0.8 ^b
pH	6	6	6	6	6
	13	6	6	6	6

^aThese means include values with ≥ 2 figures. See individual data for the number of such values included

^bThese means include values with < 2 figures. See individual data for the number of such values included

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TABLA

Individual Metabolic Values - Baseline

Group, Rat Number	Sex	Specie/ Genotype	Volume (ml)	pH	Pentose (nmol/ml)	Glucose (nmol/ml)	Rateone*	Nitrate**	Oxalate Standard	Nicotin**	Malate**	Hedobutyrogen (nmol/ml)
R-27042	M	Xt, .035	1.0	7.0	100	0			0	0	0	1.0
R-27071	M	Xt, .035	1.0	7	100	0			0	0	0	1.0
R-27082	M	Xt, .033	1.0	7	100	0			0	1	0	0.1
R-27091	M	Xt, .033	1.0	7	100	0			0	0	0	1.0
R-27099	M	Xt, .033	1.0	7	100	0			0	1	0	1.0
R-27113	M	Xt, .033	1.0	7	100	0			0	0	0	1.0
R-27114	M	Xt, .033	1.0	7	100	0			0	0	0	1.0
R-27119	M	Xt, .033	1.0	7	100	0			0	0	0	1.0
R-27131	M	Xt, .033	1.0	7	100	0			0	1	0	0.1
R-27136	M	Xt, .033	1.0	7	100	0			0	0	0	1.0
R-27141	F	Xt, .035	1.0	7	10	0			0	0	0	0.1
R-27179	F	Xt, .035	1.0	7	20	0			0	0	0	1.0
R-27180	F	Xt, .033	1.0	7	100	0			0	0	0	0.1
R-27189	F	Xt, .033	1.0	7	100	0			0	0	0	0.1
R-27192	F	Xt, .035	1.0	7	100	0			0	0	0	1.0
R-27204	F	Xt, .033	1.0	7	100	0			0	0	0	1.0
R-27209	F	Xt, .033	1.0	7	100	0			0	0	0	0.1
R-27242	F	QMS	0	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS
R-27253	F	Xt, .033	1.0	7	100	0			0	0	0	0.1
R-27255	F	Xt, .035	1.0	7	100	0			0	0	0	0.1

J. Lavey, Ph.D.

Study Director

*Code: 0 = negative
1 = + or positive
2 = ++

0.10 mg/g tissue (Glucose only)
L.U. = Lethal dose
QMS = Quantity not sufficient

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TABLE 14c. Individual Urinalysis Values - Baseline

Group, Rac. Number	Sex	Specific Gravity	Volume (cc)	pH	Protein (mg/dl)	Glucose (g/dl)	Ketones*	Urobilinogen*	Bilebilirubin	Bilirubin (mg/dl)
R-27062	M	>1.035	2.0	6	100	0	-	-	0	1.0
R-27071	M	>1.035	3.0	7	100	0	-	-	0	1.0
R-27082	M	>1.035	4.0	7	100	0	-	-	0	0.1
R-27091	M	1.033	6.0	7	30	0	0	0	0	1.0
R-27099	M	>1.035	1.3	6	<300	10	1	0	0	1.0
R-27111	M	>1.035	3.0	7	100	0	0	0	0	1.0
R-27121	M	>1.035	4.0	7	100	0	1	0	0	1.0
R-27129	M	>1.035	2.0	6	100	10	1	0	0	1.0
R-27131	M	>1.035	4.0	7	100	10	1	0	0	0.1
R-27138	M	>1.035	3.5	6	100	0	0	0	0	1.0
R-27161	F	>1.035	3.0	7	30	0	0	0	0	0.1
R-27179	F	>1.035	3.0	6	30	0	0	0	0	1.0
R-27180	F	>1.035	5.0	7	100	0	0	0	0	0.1
R-27190	F	>1.035	1.0	7	100	0	1	1	0	0.1
R-27192	F	>1.035	5.0	7	30	0	1	0	0	1.0
R-27204	F	>1.035	3.5	7	100	0	1	0	0	1.0
R-27209	F	>1.035	3.0	7	100	0	1	0	0	0.1
R-27202	F	QNS	0	QNS	QNS	QNS	QNS	QNS	QNS	QNS
R-27213	F	>1.035	5.0	7	100	0	0	0	0	0.1
R-27239	F	>1.035	1.0	7	100	0	0	0	0	0.1

*Grade: 0 = Negative
1 = + or positive
2 = ++
3 = +++

0.1g/dl = Trace (Ketones only)
Q.N.S. = Quanitites not specified
Q.N.S. = Quantities not specified

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TABLE 14. Cont.

Individual Retinalysis Values - Baseline

Group, Cat. Number	Ret- ina	Appear- ance	Color	Conc-	Epithelial			Epithelial			Epithelial			Bacteria		
					Type	Phase	Wels	Relatior	Amar-	Spores	Other	Spores	Other	Cocci	Bac-	Cell
R-27062	H	CD	DR	o	o	o	X	o	o	o	o	o	o	o	o	o
R-27063	H	CD	Y	o	o	Y	o	o	o	o	o	o	o	o	o	o
R-27064	H	CD	Y	o	X	o	F	o	o	o	o	o	o	o	o	o
R-27065	X	CD	Y	o	o	Y	o	o	o	o	o	o	o	o	o	o
R-27066	H	CD	DR	o	o	o	o	o	o	o	o	o	o	o	o	o
R-27067	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27068	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27069	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27070	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27071	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27072	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27073	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27074	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27075	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27076	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27077	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27078	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27079	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27080	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27081	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27082	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27083	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27084	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27085	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27086	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27087	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27088	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27089	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27090	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27091	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27092	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27093	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27094	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27095	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27096	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27097	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27098	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27099	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27100	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27101	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27102	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27103	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27104	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27105	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27106	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27107	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27108	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27109	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27110	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27111	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27112	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27113	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27114	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27115	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27116	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27117	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27118	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27119	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27120	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27121	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27122	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27123	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27124	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27125	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27126	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27127	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27128	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27129	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27130	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27131	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27132	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27133	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27134	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27135	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27136	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27137	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27138	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27139	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27140	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27141	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27142	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27143	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27144	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27145	H	CD	Y	o	o	T	o	o	o	o	o	o	o	o	o	o
R-27146	H	CD	Y	o	o	T	o	o	o	o	o</					

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TABLE 14, Cont.

Individual Urticularysis Values - Baseline												
Category	Spec. No.	Spec. No.	Appearance	Color	Cracks	Trophic Phase	Crystals			Epithelial		
							Uricle	Calcium Oxalate	Amorphous Oxalate	Lipid	Protein	Other
R-27067	H	CB	DR	G	0	0	0	0	0	0	0	0
K-27071	H	CD	Y	G	0	T	0	0	0	0	0	0
R-27082	H	CD	Y	G	0	F	0	0	0	0	0	0
R-27091	H	CD	Y	G	0	F	0	0	0	0	0	0
R-27099	H	CD	DR	G	0	0	0	0	0	0	0	0
R-27113	H	CD	Y	G	0	T	0	0	0	0	0	0
R-27121	H	CD	Y	G	0	T	0	0	0	0	0	0
K-27139	H	CB	Y	G	0	T	0	0	0	0	0	0
K-27131	H	CD	DR	G	0	T	0	0	0	0	0	0
R-27136	H	CD	Y	G	0	F	0	0	0	0	0	0
R-27161	F	CD	Y	G	0	F	0	0	0	0	0	0
R-27179	F	CD	Y	G	0	F	0	0	0	0	0	0
R-27180	F	CD	Y	G	0	T	0	0	0	0	0	0
K-27190	F	CD	Y	G	0	F	0	0	0	0	0	0
K-27192	Y	CD	Y	G	0	M	0	0	0	0	0	0
R-27204	F	CD	Y	G	0	H	0	0	0	0	0	0
R-27209	F	CD	Y	G	0	N	0	0	0	0	0	0
K-27242	F	QMS	QMS	QMS	0	QMS	QMS	QMS	QMS	QMS	QMS	QMS
R-27253	Y	CD	Y	G	0	Y	0	0	0	0	0	0
R-27259	F	CD	Y	G	0	N	0	0	0	0	0	0

Codes:
 G = Glassy
 Y = Light yellow
 Y = Yellow
 DR = Dark yellow
 LF = Low powered field
 HF = High powered field
 QMS = Quantity not sufficient
 N = Not present

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Individual Urinalysis Values - 6 Weeks

Tank

Group/ Cat. Number	Spec/ ID#	Gravity	Volume (ml)	Protein (mg/dl)	Urine (g/11)	Ketone	Bilirubin	Occult Blood*	Milk**	Nitrite**	Urease	Vehiculon (μg/ml)
0-6221 (continued)												
41444	H	>1.035	3.0	3	-	-	100	-	-	-	-	1.0
41448	H	>1.035	3.0	2	-	-	100	-	-	-	-	0.1
41450	H	>1.035	2.0	2	-	-	100	-	-	-	-	1.0
41451	H	>1.035	1.0	2	-	-	100	-	-	-	-	1.0
41454	H	>1.035	1.0	2	-	-	100	-	-	-	-	1.0
41457	H	>1.035	2.0	2	-	-	100	-	-	-	-	0.1
41458	H	>1.035	0.5	2	-	-	2000	-	-	-	-	0.1
41459	H	>1.035	1.0	2	-	-	3300	-	-	-	-	1.0
41460	H	>1.035	1.1	2	-	-	3300	-	-	-	-	0.1
41461	H	>1.035	7.0	2	-	-	100	-	-	-	-	0.5
41462	F	>1.035	1.3	2	-	-	10	-	-	-	-	0.1
41463	F	>1.035	7.0	2	-	-	100	-	-	-	-	0.1
41464	F	>1.035	4.0	2	-	-	2000	-	-	-	-	1.0
41465	F	>1.035	1.0	2	-	-	3300	-	-	-	-	1.0
41466	X	>1.035	1.0	2	-	-	3300	-	-	-	-	0.8
41467	F	0.98	0.5	2	-	-	open	-	-	-	-	0.1
41468	F	>1.035	2.0	2	-	-	100	-	-	-	-	0.1
41469	F	>1.035	0.25	2	-	-	3300	-	-	-	-	0.1
41470	F	>1.035	2.0	2	-	-	30	-	-	-	-	0.1
41473	F	>1.035	0.3	2	-	-	3300	-	-	-	-	0.1
41474	F	>1.035	0.3	2	-	-	3300	-	-	-	-	1.0
1000 ppm												
41475	H	>1.031	4.5	2	-	-	100	-	-	-	-	0.1
41476	H	>1.031	1.5	2	-	-	100	-	-	-	-	1.0
41477	H	>1.031	1.5	2	-	-	100	-	-	-	-	0.1
41478	H	>1.031	1.0	2	-	-	100	-	-	-	-	0.1
41479	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41480	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41481	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41482	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41483	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41484	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41485	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41486	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41487	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41488	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41489	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41490	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41491	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41492	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41493	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41494	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41495	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41496	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41497	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41498	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41499	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41500	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41501	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41502	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41503	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41504	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41505	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41506	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41507	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41508	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41509	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41510	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41511	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41512	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41513	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41514	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41515	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41516	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41517	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41518	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41519	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41520	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41521	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41522	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41523	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41524	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41525	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41526	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41527	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41528	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41529	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41530	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41531	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41532	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41533	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41534	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41535	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41536	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41537	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41538	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41539	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41540	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41541	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41542	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41543	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41544	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41545	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41546	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41547	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41548	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41549	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41550	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41551	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41552	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41553	H	>1.031	2.0	2	-	-	100	-	-	-	-	0.1
41554	H	>1.031	2.0	2	-	-	100					

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TABLE 15.
Individual Urinalysis Values - 6 Weeks

Group, Rat Number	Sex	Specific Gravity	Volume (ml)	pH	Glucose		Ketones*	Nitrite*	Blood*	Occult Blood*	Microbi* Urobilogen (EU/ml)
					Test	(kg/dl)					
Q.FPM (Diabetics)											
41445	M	21.035	1.0	5	100	0			1	0	0
41446	M	21.035	3.0	9	100	0			1	0	0
41447	M	21.035	2.0	6	100	0			0	0	0
41451	M	21.035	1.0	6	100	0			2	0	1.0
41454	M	21.035	1.0	6	100	0			0	0	1.0
41457	M	21.035	1.0	6	100	0			7	0	1.0
41458	M	21.035	2.0	7	100	0			1	0	1.0
41459	M	21.035	0.5	6	100	0			0	0	0.1
41460	M	21.035	1.0	6	100	0			0	0	0.1
41461	M	21.035	5.0	6	100	0			0	1	1.0
41462	M	21.035	1.0	7	100	0			0	0	0.1
41463	M	21.035	2.0	6	100	0			0	0	0.1
41464	M	21.035	1.0	6	100	0			0	0	0.1
41465	M	21.035	1.0	6	100	0			0	0	0.1
41466	M	21.035	1.0	6	100	0			0	0	1.0
41467	M	QNS	0	QNS	QNS	0			0	0	QNS
41468	M	21.035	2.0	6	100	0			0	0	0.1
41469	M	21.035	0.5	6	100	0			0	0	0.1
41471	M	21.035	2.0	9	100	0			0	1	0.1
41474	M	21.035	0.5	6	100	0			0	0	1.0
<hr/>											
1000 Pairs											
41475	M	21.035	2.5	6	100	0			1	0	0
41476	M	21.035	1.5	6	100	0			0	0	0
41478	M	21.035	1.5	6	100	0			0	0	1.0
41479	M	21.035	1.5	6	100	0			0	0	0.4
41480	M	21.035	1.0	6	100	0			0	0	0.1
41492	M	21.035	3.0	6	100	0			0	0	0.1
41493	M	21.035	2.0	6	100	0			0	0	0.1
41494	M	21.035	2.0	6	100	0			0	0	0.1
41495	M	21.035	3.0	QNS*	QNS*	0			0	0	QNS*
41496	M	21.035	1.0	6	100	0			0	0	1.0
41497	M	21.035	4.0	6	100	0			0	0	0.1
41498	M	QNS	0	QNS	QNS	0			0	0	QNS
41499	M	21.035	1.0	6	100	0			0	0	1.0
41500	M	21.035	1.0	6	100	0			0	0	1.0
41501	M	21.035	1.0	6	100	0			0	0	1.0
41503	M	21.035	1.5	6	100	0			0	0	1.0
41506	M	21.035	0.5	5	100	0			1	0	1.0
41507	M	21.035	3.0	7	100	0			0	0	0.1
41510	M	21.035	1.0	6	100	0			0	1	0.1
41511	M	21.035	1.0	6	100	0			0	1	0.1
41515	M	21.035	1.0	6	100	0			0	0	0.1
41517	M	21.035	3.0	7	100	0			0	1	1.0
41518	M	21.035	4.0	6	100	0			0	0	1.0

*Code: 0 = Negative,
1 = + or positive
2 = ++
3 = +++

0.10 g/dl = Trace (Glucose only)
E.U. = English units
QNS = Quantity not sufficient
In view of the 3.0 ml volume these values are apparently to exceed but reflect original data.

TABLE IV. CONC.

Group- Cat. Number	Appear- ance	Sex	Color	Carcis-	Crystals			Epithelial			Bacteria		
					Triple	Uric Phos- phate	Calcium oxylate	Lympho- cytes	Neutro- philic gran-	Retic- ular	Gastric cells	Bac- teria	Other cells
0 ppm (Control):													
41464	H	CD	Y	0	Y	0	0	0	0	0	0	0	N*
41468	H	CD	Y	0	Y	0	0	0	0	0	0	0	N*
41469	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41471	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41474	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41475	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41477	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41478	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41479	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41480	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41481	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41482	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41483	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41484	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41485	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41486	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41487	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41488	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41489	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41490	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41491	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41492	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41493	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41494	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41495	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41496	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41497	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41498	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41499	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41500	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41501	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41502	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41503	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41504	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41505	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41506	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41507	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41508	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41509	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41510	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41511	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41512	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41513	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41514	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41515	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41516	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
1000 ppm:													
41485	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41490	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41491	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41492	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41493	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41494	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41495	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41496	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41497	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41498	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41499	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41500	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41501	H	CD	Y	0	Y	0	0	0	0	0	0	0	0
41502	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41503	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41504	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41505	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41506	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41507	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41508	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41509	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41510	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41511	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41512	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41513	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41514	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41515	F	CD	Y	0	Y	0	0	0	0	0	0	0	0
41516	F	CD	Y	0	Y	0	0	0	0	0	0	0	0

0 ppm (Control)
1000 ppm
0 ppm (Control)

QNS - Quantity not sufficient
Y - Yellow
L - Light yellow
DC - Dark yellow
LPF - Low power field
HPF - High power field
25x/HPF

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QNS - Quantity not sufficient
Y - Yellow

DC - Dark yellow
LPF - Low power field
HPF - High power field

25x/HPF

QNS - Quantity not sufficient
Y - Yellow

DC - Dark yellow
LPF - Low power field
HPF - High power field

25x/HPF

QNS - Quantity not sufficient
Y - Yellow

DC - Dark yellow
LPF - Low power field
HPF - High power field

25x/HPF

QNS - Quantity not sufficient
Y - Yellow

DC - Dark yellow
LPF - Low power field
HPF - High power field

25x/HPF

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TABLE Individual Subjective Values & Marks

Group, Rac. Number	Sex	Specific Gravity	Volume (ml)	pH	Protein (mg/dl)	Glucone (mg/dl)	Ketone*	Urobilinogen (mg/dl)	Acetyl Stools	Milkfat*	Urobilinogen (mg/dl)
<u>5000 ppm</u>											
41527	M	21.033	1.0	6	2300	0	-	-	1	0.1	1.0
41535	M	21.033	1.5	6	2300	0	-	-	2	0	1.0
41527	F	21.033	2.0	6	2300	0	-	-	1	0	1.0
41529	M	21.033	2.5	6	2300	0	-	-	1	0	1.0
41532	M	21.033	3.0	6	2300	0	-	-	1	0	1.0
41535	M	21.033	3.5	6	2300	0	-	-	1	0	1.0
41538	M	21.033	4.0	6	2300	0	-	-	1	0	1.0
41539	M	21.033	4.5	6	2300	0	-	-	1	0	1.0
41540	M	21.033	5.0	6	2300	0	-	-	1	0	1.0
41541	M	21.033	6.0	6	2300	0	-	-	1	0	1.0
41544	F	0	QES	QES	QES	QES	QES	QES	QES	QES	QES
41545	F	21.033	1.0	6	2300	0	-	-	1	0.1	1.0
41546	F	21.033	1.0	6	2300	0	-	-	1	0	1.0
41551	F	0	QES	QES	QES	QES	QES	QES	QES	QES	QES
41553	F	21.033	1.0	6	2300	0	-	-	1	0.1	1.0
41554	F	21.033	1.0	6	2300	0	-	-	1	0.1	1.0
41555	F	21.033	1.0	6	2300	0	-	-	1	0	1.0
41557	F	21.033	2.0	6	2300	0	-	-	1	0	1.0
41558	F	21.033	1.0	6	2300	0	-	-	1	0	1.0
41561	F	0	QES	QES	QES	QES	QES	QES	QES	QES	QES
<u>10,000 ppm</u>											
41563	M	21.033	3.0	6	100	0	-	-	1	0	0.1
41565	M	21.033	4.0	6	100	0	-	-	1	0	0.1
41566	M	21.033	5.0	7	100	0	-	-	1	0	0.1
41568	M	21.033	5.0	6	100	0	-	-	1	0	0.1
41570	M	21.033	5.0	7	100	0	-	-	1	0	0.1
41571	M	21.033	1.1	6	100	0	-	-	1	0.1	0.1
41572	M	21.033	2.0	6	100	0	-	-	1	0	0.1
41573	M	21.033	1.3	6	2300	0	-	-	1	0	0.1
41576	M	21.033	1.3	6	2300	0	-	-	1	0	0.1
41580	M	21.033	3.0	6	2300	0	-	-	1	0	0.1
41582	F	21.033	1.0	6	70	0	-	-	1	0	0.1
41583	F	21.033	0.3	6	100	0	-	-	1	0	0.1
41584	F	21.033	7.0	6	100	0	-	-	1	0	1.0
41585	F	21.033	7.0	6	30	0	-	-	1	0	1.0
41586	F	21.033	1.0	6	100	0	-	-	1	0	1.0
41589	F	21.033	2.0	6	2300	0	-	-	1	0	0.1
41591	F	21.033	1.0	6	100	0	-	-	1	0	0.1
41592	F	21.033	1.0	6	2300	0	-	-	1	0	0.1
41593	F	21.033	1.0	6	2300	0	-	-	1	0	0.1
41595	F	21.033	1.0	6	2300	0	-	-	1	0	0.1
41596	F	21.033	4.0	6	30	0	-	-	1	0	0.1
41597	F	21.033	1.0	6	2300	0	-	-	1	0	0.1
41598	F	21.033	1.0	6	2300	0	-	-	1	0	0.1
41599	F	21.033	1.0	6	2300	0	-	-	1	0	0.1

*Code: 0 - Negative
1 - + or positive
2 - ++
3 - +++

QES - Trace (Ketone only)

t.b.c. - thelich value

*Quantity not sufficient

**Repeat determination

James Laveitt, Ph.D.
Study Director

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TABLE 15. Cont.

Group- Rat Number	Sex	Specific Gravity	Volume (ml)	pH	Protein (mg/dl)	Glucose (μ g/dl)	Ketones*	Bilirubin**	Oxalate Bilirubin	Methane***	Urobilinogen (μ g/dl)
10000 RPM:											
41523	H	21.033	1.0	6	>300	0	-	-	0	1	0.1
41525	H	21.025	2.3	6	>300	0	-	-	2	0	1.0
41527	H	21.035	2.0	6	>300	0	-	-	0	0	1.0
41529	H	21.035	2.3	6	>300	0	-	-	0	1	1.0
41531	H	21.033	2.0	6	>300	0	-	-	0	1	1.0
41533	H	21.033	2.3	6	>300	0	-	-	0	0	1.0
41535	H	21.025	1.0	5	>300	0	-	-	0	0	1.0
41536	H	21.025	1.0	5	>300	0	-	-	0	1	0.1
41539	H	21.035	1.5	6	>300	0	-	-	0	1	0.1
41540	H	21.035	2.0	6	100	0	-	-	0	1	4.0
41541	H	21.035	1.0	6	200	0	-	-	0	0	0.1
41544	F	0	0	QNS	QNS	QNS	QNS	QNS	QNS	QNS	QNS
41545	F	21.025	1.0	6	>300	0	-	-	0	1	0.1
41548	F	21.035	1.0	6	>300	0	-	-	0	0	1.0
41551	F	0	0	QNS	QNS	QNS	QNS	QNS	QNS	QNS	QNS
41553	F	21.035	1.0	6	100	0	-	-	1	0.1	0.1
41554	F	21.033	1.0	6	100	0	-	-	2	0	0.1
41555	F	21.035	1.0	6	>300	0	-	-	1	0	1.0
41557	F	21.035	2.0	6	100	0	-	-	1	1	1.0
41558	F	21.035	1.0	6	>300	0	-	-	0	1	1.0
41561	F	0	0	QNS	QNS	QNS	QNS	QNS	QNS	QNS	QNS
100,000 RPM:											
41563	H	21.035	2.0	6	100	0	-	-	0	0	0.1
41564	H	21.033	4.0	6	>300	0	-	-	0	0	0.1
41566	H	21.035	5.0	7	100	0	-	-	0	0	0.1
41568	H	21.033	5.0	6	100	0	-	-	0	0	0.1
41570	H	21.033	1.0	7	>300	0	-	-	0	0	0.1
41571	H	21.035	3.5	6	100	0	-	-	0	0	0.1
41572	H	21.031	1.0	6	100	0	-	-	0	0	1.0
41573	H	21.035	1.5	6	>300	0	-	-	0	0	0.1
41576	H	21.033	1.3	6	>300	0	-	-	0	1	0.1
41580	H	21.035	1.0	6	>300	0	-	-	1	0	0.1
41582	F	21.033	2.0	6	30	0	-	-	0	0	1.0
41583	F	21.033	0.3	6	100	0	-	-	0	0	0.1
41584	F	21.035	2.0	5	100	0	-	-	0	0	0.1
41585	F	21.023	2.0	6	30	0	-	-	1	1	1.0
41586	F	21.033	1.0	6	100	0	-	-	0	0	1.0***
41597	F	21.033	2.0	6	>300	0	-	-	3	1	0.1
41593	F	21.035	1.0	6	>300	0	-	-	0	0	1.0
41595	F	21.033	1.0	6	2300	0	-	-	0	1	1.0
41596	F	21.035	4.0	6	20	0	-	-	0	0	0.1
41599	F	21.033	1.0	6	100	0	-	-	0	0	1.0

*Color: 0 = Negative
1 = + or positive
2 = ++

**0.10 μ g/dl = Trace (Glucose only)

***T.O. = Trichloroacetic acid test

QNS = Quantity not sufficient

****Repeat determination

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TABLE 13. Events - Individual Detoxified Values - 6 Weeks

Group No. Number	Appar- ent source	Color	Cause	Operates						Spotted fins	Sporadic	Transient	Spontaneous	Other cells	
				Triple Phone	Tele- phone phase	Acid gasoline	Ammonium phosphate	Other phosphate	Panel						
10000 RPM:															
41521	H	CD	X	0	F	0	0	F	0	0	0	0	0	0	H
41522	H	CD	X	0	H	0	0	K	0	0	0	0	0	0	N
41523	H	CD	X	0	T	0	0	F	0	L	0	0	0	0	R
41529	H	CD	X	0	T	0	0	F	0	L	0	0	0	0	R
41532	H	CD	X	0	F	0	0	F	0	0	0	0	0	0	0
41535	H	CD	X	0	F	0	0	F	0	L	0	0	0	0	0
41538	H	CD	X	0	H	0	0	F	0	0	0	0	0	0	R
41539	H	CD	X	0	T	0	0	F	0	0	0	0	0	0	O
41540	H	CD	X	0	X	0	0	F	0	0	0	0	0	0	O
41541	H	CD	X	0	T	0	0	F	0	0	0	0	0	0	R
41564	F	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS
41565	F	CD	X	0	T	0	0	F	0	0	0	0	0	0	H
41568	F	CD	X	0	H	0	0	F	0	0	0	0	0	0	R
41571	F	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS
41573	F	CD	X	0	X	0	0	F	0	0	0	0	0	0	R
41574	F	CD	X	0	T	0	0	H	0	0	0	0	0	0	R
41575	F	CD	X	0	T	0	0	H	0	0	0	0	0	0	R
41577	F	CD	X	0	H	0	0	F	0	L	0	0	0	0	R
41578	F	CD	X	0	T	0	0	H	0	0	0	0	0	0	O
41579	F	CD	X	0	H	0	0	F	0	L	0	0	0	0	O
41580	F	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS
10,000 RPM:															
41563	H	CD	X	0	F	0	0	F	0	0	0	0	0	0	H
41564	H	CD	X	0	F	0	0	F	0	0	0	0	0	0	O
41566	H	CD	X	0	X	0	0	F	0	0	0	0	0	0	O
41568	H	CD	X	0	T	0	0	H	0	0	0	0	0	0	R
41570	H	CD	X	0	T	0	0	H	0	0	0	0	0	0	O
41571	H	CD	X	0	S	0	0	F	0	0	0	0	0	0	O
41572	H	CD	X	0	T	0	0	H	0	0	0	0	0	0	O
41573	H	CD	X	0	T	0	0	H	0	0	0	0	0	0	O
41574	H	CD	X	0	X	0	0	F	0	0	0	0	0	0	O
41575	H	CD	X	0	T	0	0	H	0	0	0	0	0	0	O
41576	H	CD	X	0	X	0	0	F	0	0	0	0	0	0	O
41577	F	CD	X	0	F	0	0	F	0	0	0	0	0	0	O
41578	F	CD	X	0	H	0	0	F	0	0	0	0	0	0	O
41579	F	CD	X	0	T	0	0	H	0	0	0	0	0	0	O
41580	F	CD	X	0	H	0	0	F	0	0	0	0	0	0	O
41581	F	CD	X	0	T	0	0	H	0	0	0	0	0	0	O
41582	F	CD	X	0	H	0	0	F	0	0	0	0	0	0	O
41583	F	CD	X	0	T	0	0	H	0	0	0	0	0	0	O
41584	F	CD	X	0	H	0	0	F	0	0	0	0	0	0	O
41585	F	CD	X	0	T	0	0	H	0	0	0	0	0	0	O
41586	F	CD	X	0	H	0	0	F	0	0	0	0	0	0	O
41587	F	CD	X	0	T	0	0	H	0	0	0	0	0	0	O
41588	F	CD	X	0	H	0	0	F	0	0	0	0	0	0	O
41589	F	CD	X	0	T	0	0	H	0	0	0	0	0	0	O
41590	F	CD	X	0	H	0	0	F	0	0	0	0	0	0	O
41591	F	CD	X	0	T	0	0	H	0	0	0	0	0	0	O
41592	F	CD	X	0	H	0	0	F	0	0	0	0	0	0	O
41593	F	CD	X	0	T	0	0	H	0	0	0	0	0	0	O
41594	F	CD	X	0	H	0	0	F	0	0	0	0	0	0	O
41595	F	CD	X	0	T	0	0	H	0	0	0	0	0	0	O
41596	F	CD	X	0	H	0	0	F	0	0	0	0	0	0	O
41597	F	CD	X	0	T	0	0	H	0	0	0	0	0	0	O

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James Laveglia, Ph.D., Director
Study Director

QMS - Quality most sufficient
QMS - Acceptable quality
CB - Cloudy

LPF - Low power field
HLPF - High power field

QMS - Quality most sufficient
QMS - Acceptable quality
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QMS - Acceptable quality
CB - Cloudy

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QMS - Quality most sufficient
QMS - Acceptable quality
CB - Cloudy

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TABLE 15. Cont.

Group.	Rock Number	Appearance	Color	Crust	Coccoliths			Epiphytial Spores	Leucocysts	Bacteria	Other Bac.	Fungi	Yeast	Cocci	Cells
					Triple Phase	Uric Acid	Calcium Oxyphate								
30000 PPM:															
41323	H	CD	Y	C	Y	H	Y	Y	L	Y	Y	Y	Y	Y	Y
41325	H	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41327	H	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41329	H	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41332	H	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41335	H	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41336	H	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41339	H	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41340	H	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41341	H	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41344	Y	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS
41345	F	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41348	F	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41351	F	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS
41353	F	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41354	F	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41355	F	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41357	F	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41358	F	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41361	Y	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS
10,000 PPM:															
41363	H	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41364	H	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41366	H	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41368	H	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41370	X	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41371	H	EP	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41372	H	EP	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41373	H	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41376	H	EP	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41378	H	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41382	F	EP	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41383	F	EP	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41386	F	EP	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41388	F	EP	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41390	F	EP	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41392	F	EP	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41393	F	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41395	F	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41396	F	EP	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41398	F	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y
41399	F	CD	Y	C	Y	C	T	Y	Y	Y	Y	Y	Y	Y	Y

Color: R = Red/Yellow
Y = Yellow
B = Black/Tan
L = Light yellow
QMS = Quantities not sufficient
*available cysts

Code: R = Cystifer

F = 1-50%

M = 6-10%

T = 10-15%

LP = Low powered field

HP = High powered field

16.5-621

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TABLE I
Georgy,
Rat
Number
Sex
Age
Object (Control)

		Volume (ml)	pH	Fraction (ug/ml)	Glucose (ug/ml)	Ketones*	Bilirubin**	Bile acids***	Blood bilirubin (ug/dl)	Micr. bilirubin (ug/dl)
4.1453	H	21.033	7.3	4	2300	0	1	1	1.0	1.0
4.1454	H	21.033	7.3	2	2300	0	1	1	1.0	0.1
4.1455	H	21.033	7.0	4	2300	0	1	1	0.1	0.1
4.1456	H	21.033	7.6	6	2300	0	1	1	0.1	0.1
4.1457	H	21.033	7.5	6	2300	0	1	1	0.1	0.1
4.1458	H	21.023	13.0	2	2300	0	0	1	0.1	0.1
4.1459	H	21.023	2.0	6	2300	0	1	1	0.1	0.1
4.1460	H	21.033	1.0	6	2300	0	1	1	1.0	0.1
4.1461	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1462	H	21.033	7.0	9	1600	0	1	0	0.1	0.1
4.1463	F	>1.033	1.3	6	1600	0	1	1	0.1	0.1
4.1464	F	21.033	1.0	6	1600	0	1	1	0.1	0.1
4.1465	F	21.033	1.0	6	1600	0	1	1	0.1	0.1
4.1466	F	21.033	1.0	6	1600	0	1	1	0.1	0.1
4.1467	F	21.033	10.5	4	2300	0	1	1	1.0	1.0
4.1468	F	>1.033	<0.1	4	2300	0	1	1	0.1	0.1
4.1469	F	QPS	6	QPS	QPS	QPS	QPS	QPS	QPS	QPS
4.1470	F	>1.033	3.0	4	30	0	0	0	0.1	0.1
4.1471	F	21.033	1.0	6	1600	0	1	1	0.1	0.1
4.1472	F	21.033	1.0	6	2300	0	1	1	0.1	0.1
4.1473	F	21.033	7.3	6	2300	0	1	1	0.1	0.1
4.1474	F	21.033	0.5	3	2300	0	1	1	0.1	0.1
4.1475	F	21.033	0.5	3	2300	0	1	1	0.1	0.1
4.1476	F	21.033	0.5	3	2300	0	1	1	0.1	0.1
4.1477	F	21.033	0.5	3	2300	0	1	1	0.1	0.1
4.1478	F	21.033	0.5	3	2300	0	1	1	0.1	0.1
4.1479	F	21.033	0.5	3	2300	0	1	1	0.1	0.1
4.1480	F	21.033	0.5	3	2300	0	1	1	0.1	0.1
4.1481	F	21.033	0.5	3	2300	0	1	1	0.1	0.1
1000 Dose										
4.1482	H	21.033	1.1	1	1600	0	1	1	1.0	1.0
4.1483	H	21.033	4.3	6	2300	0	1	1	0.1	0.1
4.1484	H	21.033	4.3	6	2300	0	1	1	0.1	0.1
4.1485	H	21.033	4.0	6	2300	0	1	1	0.1	0.1
4.1486	H	21.033	7.3	6	1600	0	1	1	0.1	0.1
4.1487	H	21.033	7.0	1	2300	0	1	1	0.1	0.1
4.1488	H	21.033	4.0	6	2300	0	1	1	0.1	0.1
4.1489	H	21.033	2.3	6	2300	0	1	1	0.1	0.1
4.1490	H	21.033	6.0	1	1600	0	1	1	0.1	0.1
4.1491	H	21.033	7.3	4	2300	0	1	1	0.1	0.1
4.1492	H	21.033	4.3	4	1600	0	1	1	0.1	0.1
4.1493	H	21.033	4.3	4	1600	0	1	1	0.1	0.1
4.1494	H	21.033	1.0	5	2300	0	1	1	1.0	1.0
4.1495	H	21.033	4.3	6	2300	0	1	1	0.1	0.1
4.1496	H	21.033	0.5	6	2300	0	1	1	1.0	1.0
4.1497	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1498	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1499	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1500	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1501	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1502	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1503	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1504	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1505	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1506	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1507	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1508	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1509	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1510	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1511	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1512	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1513	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1514	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1515	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1516	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1517	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1518	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1519	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1520	H	21.033	0.5	6	2300	0	1	1	0.1	0.1
4.1521	H	21.033	0.5	6	2300	0	1	1	0.1	0.1

*Gel test. 0 = negative
1 = one positive
2 = two positive
3 = three positive

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QPS = Quantitative and sensitive

462-674

James Lavegitt, Ph.D.
Study Director

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TABLE 16
Individual Urinalysis Values - 13 Weeks

Group, Rack Number	Sex	Specific Gravity	Volume (ml)	pH	Protein (ug/dl)	Glucose (gal)	Ketones	Bilirubin	Occult Blood*	Nitrate*	Urobilogen (mg/dl)
0 ppm (Control):											
A1442	M	1.011	1.1	6	>100	0	-	-	0	1	1.0
A1444	M	1.011	1.3	7	>100	0	-	-	1	0	1.0
A1449	M	1.011	2.0	6	>100	0	-	-	0	0	0.1
A1453	M	1.015	2.0	6	>100	0	-	-	0	0	0.1
A1454	M	1.015	1.5	6	>100	0	-	-	0	0	0.1
A1456	M	1.015	15.0	9	>100	0	-	-	0	0	0.1
A1457	M	1.015	2.0	6	>100	0	-	-	0	0	0.1
A1459	M	1.015	1.0	6	>100	0	-	-	1	1	1.0
A1460	M	1.015	0.5	6	>100	0	-	-	0	0	0.1
A1461	M	1.015	1.8	9	>100	0	-	-	0	0	0.1
A1463	F	1.015	1.5	6	100	0	-	-	1	0	0.1
A1466	F	1.015	1.0	6	100	0	-	-	0	0	0.1
A1467	F	1.015	<0.5	6	100	0	-	-	0	0	1.0
A1469	F	1.015	<0.5	6	100	0	-	-	1	1	1.0
A1473	F	0.95	0	6	QNS	QNS	QNS	QNS	QNS	QNS	QNS
A1475	F	1.015	3.0	6	20	0	0	0	0	0	0.1
A1476	F	1.015	1.0	6	100	0	-	-	0	0	0.1
A1477	F	1.015	1.0	6	>300	0	-	-	0	0	0.1
A1480	F	1.015	2.5	6	>300	0	-	-	0	0	0.1
A1481	F	1.015	0.5	3	>300	0	-	-	0	0	1.0
1000 ppm:											
A1482	M	1.015	3.5	7	>300	0	-	-	1	0	0.1
A1484	M	1.015	4.3	8	>300	0	-	-	1	0	0.1
A1485	M	1.015	4.6	6	>300	0	-	-	0	0	0.1
A1486	M	1.015	3.3	6	100	0	-	-	0	0	0.1
A1488	M	1.015	3.0	7	>100	0	-	-	0	0	0.1
A1489	M	1.015	4.0	6	>300	0	-	-	0	0	0.1
A1491	M	1.015	3.7	6	>300	0	-	-	0	0	0.1
A1492	M	1.015	4.0	7	100	0	-	-	0	0	0.1
A1497	M	1.015	2.3	6	>300	0	-	-	0	0	0.1
A1498	M	1.015	4.1	6	>300	0	-	-	0	0	0.1
A1500	M	1.015	4.1	6	>300	0	-	-	0	0	0.1
A1502	M	1.015	4.1	6	>300	0	-	-	0	0	0.1
A1507	F	1.015	1.0	5	>300	0	-	-	1	0	1.0
A1508	F	1.015	1.3	6	>300	0	-	-	1	0	1.0
A1510	F	1.015	0.3	6	>300	0	-	-	1	1	1.0
A1509	F	1.015	<0.1	6	>300	0	-	-	0	0	0.1
A1512	F	1.015	1.3	6	100	0	-	-	0	0	0.1
A1514	F	1.015	2.0	6	100	0	-	-	1	0	0.1
A1516	F	1.015	2.0	6	100	0	-	-	1	0	1.0
A1517	F	1.015	1.0	6	100	0	-	-	1	0	1.0
A1518	F	1.015	1.0	6	100	0	-	-	1	0	1.0
A1519	F	1.015	1.0	6	100	0	-	-	1	0	1.0
A1520	F	1.015	1.0	6	100	0	-	-	1	0	0.1
A1521	F	1.015	1.3	6	>300	0	-	-	1	0	0.1

*Code:
0 = Negative
+ = + or positive
- = -

0.10 g/dl = Trace (Glucose only)
QNS = Qualitatively not sufficient
3 = ++

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TABLE 16. Cont.
Individual Actinolite Values - 13 Weeks

Genotype Ref. Number	Appeari- ance	Color	Crack Count	Turtle Phase/ phase	Hole Act./A	Collective display	Amor- phous pieces	Stress	Erophication		Larva- cycle	Exposure- time	Species	Value	Sectoral base	Other cells	
									Details	Equi- valent mm							
O-Rings (Control)																	
A-14-42	F	CD	Y	0	0	0	0	+	Y	0	1	0	3	0	0	0	0
A-14-44	F	CD	Y	0	0	0	0	-	Y	0	2	0	0	0	0	0	0
A-14-45	F	CR	Y	0	0	0	0	-	Y	0	3	0	2	0	0	0	0
A-14-53	F	CD	Y	0	0	0	0	-	Y	0	2	0	2	0	0	0	0
A-14-54	F	CD	Y	0	0	0	0	-	Y	0	1	0	0	0	0	0	0
A-14-56	F	CD	X	0	0	0	0	-	Y	0	3	0	0	0	0	0	0
A-14-57	F	CD	X	0	0	0	0	-	Y	0	1	0	0	0	0	0	0
A-14-58	F	CD	X	0	0	0	0	-	Y	0	1	0	0	0	0	0	0
A-14-60	F	CD	X	0	0	0	0	-	Y	0	1	0	0	0	0	0	0
A-14-61	F	CD	X	0	0	0	0	-	Y	0	1	0	0	0	0	0	0
A-14-63	F	CD	X	0	0	0	0	-	Y	0	1	0	0	0	0	0	0
A-14-64	F	CD	X	0	0	0	0	-	Y	0	1	0	0	0	0	0	0
A-14-67	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	QMS	QMS
A-14-69	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	QMS
L-14-71	F	QMS	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	QMS
A-14-72	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	0
A-14-74	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	0
A-14-77	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	0
A-14-80	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	0
A-14-81	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	0
10000 O-Rings																	
A-14-82	F	CD	Y	0	0	0	0	-	Y	0	1	0	0	0	0	0	0
A-14-84	F	CD	Y	0	0	0	0	-	Y	0	2	0	0	0	0	0	0
A-14-85	F	CD	Y	0	0	0	0	-	Y	0	3	0	0	0	0	0	0
A-14-86	F	CD	Y	0	0	0	0	-	Y	0	1	0	0	0	0	0	0
A-14-88	F	CD	Y	0	0	0	0	-	Y	0	3	0	0	0	0	0	0
A-14-90	F	CD	Y	0	0	0	0	-	Y	0	1	0	0	0	0	0	0
A-14-91	F	CD	Y	0	0	0	0	-	Y	0	1	0	0	0	0	0	0
A-14-93	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	0
A-14-97	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	0
A-14-98	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	0
A-14-99	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	0
A-14-100	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	0
A-14-101	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	0
A-14-102	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	0
A-14-104	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	0
A-14-105	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	0
A-14-106	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	0
A-14-107	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	0
A-14-108	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	0
A-14-111	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	0
A-14-114	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	0
A-14-115	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	0
A-14-117	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	0
A-14-120	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	0
A-14-121	F	CD	Y	0	0	0	0	-	Y	0	0	0	0	0	0	0	0
Code: X = <i>Citrus</i> Y = <i>Eggplant</i> H = <i>6-10/Ltr</i> T = <i>300/Ltr</i> L = <i>Chili</i> R = <i>Tomato</i> W = <i>High moisture field</i> H = <i>High sun exposure field</i>																	
Legend: IV = Light yellow Y = Yellow BY = Dark yellow B = Brown L = Low H = High C = Cloudy																	
Date: 7-21-81 Study Director: James Laveglio, Ph.D.																	

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TABLE 16 (Cont.)

Individual Otoliths Values - II. Ducks

Group, Cat. Number	Appear- ance	Color	Crystals	Epithelial				Keratohy- aline				Bacteric- ial				Other Micro- bes			
				Telio- phore	Uricle	Calcium Oxalate Acid	Amni- otic phage	Epithelial mucus	Other	Other	Spores	Yeast	Cocc.	Fungi	Bacilli	Actinomycetes	Protozoa	Other Cells	
0 ppm (Control):																			
41447	M	CB	Y	T	0	0	T	T	0	L	0	0	1	0	0	0	0	0	
41448	H	CB	Y	T	0	0	T	T	0	L	0	0	2	0	0	0	0	0	
41449	H	CB	Y	T	0	0	T	T	0	L	0	0	2	0	0	0	0	0	
41453	H	CB	Y	T	0	0	T	T	0	L	0	0	2	0	0	0	0	0	
41454	H	CB	Y	T	0	0	T	T	0	L	0	0	2	0	0	0	0	0	
41456	H	CB	Y	T	0	0	T	T	0	L	0	0	2	0	0	0	0	0	
41457	H	CB	Y	T	0	0	T	T	0	L	0	0	2	0	0	0	0	0	
41459	H	CB	Y	T	0	0	T	T	0	L	0	0	2	0	0	0	0	0	
41460	H	CB	Y	T	0	0	T	T	0	L	0	0	4	0	0	0	0	0	
41461	H	CB	Y	T	0	0	T	T	0	L	0	0	5	0	0	0	0	0	
41465	F	CB	Y	T	0	0	T	T	0	L	0	0	5	0	0	0	0	0	
41466	F	CB	Y	T	0	0	T	T	0	L	0	0	5	0	0	0	0	0	
41467	F	CB	Y	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	
41469	F	CB	Y	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	
41473	F	QMS	Y	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	
41475	F	CB	Y	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	
41476	F	CB	Y	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	
41477	F	CB	Y	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	
41480	F	CB	Y	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	
41481	F	CB	Y	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	
1000 ppm:																			
41482	H	CB	Y	T	0	0	T	T	0	L	0	0	0	0	0	0	0	0	
41484	H	CB	Y	T	0	0	T	T	0	L	0	0	0	0	0	0	0	0	
41485	H	CB	Y	T	0	0	T	T	0	L	0	0	0	0	0	0	0	0	
41486	H	CB	Y	T	0	0	T	T	0	L	0	0	0	0	0	0	0	0	
41487	H	CB	Y	T	0	0	T	T	0	L	0	0	0	0	0	0	0	0	
41488	H	CB	Y	T	0	0	T	T	0	L	0	0	0	0	0	0	0	0	
41489	H	CB	Y	T	0	0	T	T	0	L	0	0	0	0	0	0	0	0	
41490	H	CB	Y	T	0	0	T	T	0	L	0	0	0	0	0	0	0	0	
41491	H	CB	Y	T	0	0	T	T	0	L	0	0	0	0	0	0	0	0	
41493	H	CB	Y	T	0	0	T	T	0	L	0	0	0	0	0	0	0	0	
41497	H	CB	Y	T	0	0	T	T	0	L	0	0	0	0	0	0	0	0	
41500	H	CB	Y	T	0	0	T	T	0	L	0	0	0	0	0	0	0	0	
41502	F	CB	Y	T	0	0	T	T	0	L	0	0	0	0	0	0	0	0	
41504	F	CB	Y	T	0	0	T	T	0	L	0	0	0	0	0	0	0	0	
41506	F	CB	Y	T	0	0	T	T	0	L	0	0	0	0	0	0	0	0	
41509	F	CB	Y	T	0	0	T	T	0	L	0	0	0	0	0	0	0	0	
41512	F	CB	Y	T	0	0	T	T	0	L	0	0	0	0	0	0	0	0	
41514	F	CB	Y	T	0	0	T	T	0	L	0	0	0	0	0	0	0	0	
41516	F	CB	Y	T	0	0	T	T	0	L	0	0	0	0	0	0	0	0	
41518	F	CB	Y	T	0	0	T	T	0	L	0	0	0	0	0	0	0	0	
41520	F	CB	Y	T	0	0	T	T	0	L	0	0	0	0	0	0	0	0	
41521	F	CB	Y	T	0	0	T	T	0	L	0	0	0	0	0	0	0	0	

LY = Light Yellow
 Y = Yellow
 DY = Dark Yellow
 BR = Brown
 LRF = Low powered field
 HRF = High powered field

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TABLE I
Geographic
Data
Residence
Sex

	Specific Gravity	Volume (ml)	pH	Turbidity (mg/l)	Glycose (g/dl)	Chlorine (ppm)	Ammonium	Bicarbonate	Bicarbonate Stable	nitrate*	Nitrite**	Nitrogen (ppm/dl)
10000 JPSI												
41317	H	>1.035	7.6	2300	0	1	0	0	0	0	0	0.1
51226	H	>1.035	6.0	100	0	1	0	0	0	0	0	0.1
41329	H	>1.035	7.5	2300	0	1	0	0	0	0	0	0.1
41920	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41515	H	>1.035	7.5	2300	0	1	0	0	0	0	0	0.1
41516	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41338	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41339	H	>1.035	7.5	2300	0	1	0	0	0	0	0	0.1
41340	H	>1.035	7.5	2300	0	1	0	0	0	0	0	0.1
41341	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41342	F	>1.035	7.5	100	0	1	0	0	0	0	0	0.1
41343	F	>1.035	<0.5	2300	0	1	0	0	0	0	0	0.1
41344	F	>1.035	7.5	100	0	1	0	0	0	0	0	0.1
41351	F	>1.035	7.5	2300	0	1	0	0	0	0	0	0.1
41352	F	>1.035	7.5	2300	0	1	0	0	0	0	0	0.1
41353	F	>1.035	7.5	2300	0	1	0	0	0	0	0	0.1
41354	F	>1.035	<0.5	100	0	1	0	0	0	0	0	0.1
41355	F	>1.035	7.5	2300	0	1	0	0	0	0	0	0.1
41356	F	>1.035	7.5	2300	0	1	0	0	0	0	0	0.1
41357	F	>1.035	7.5	2300	0	1	0	0	0	0	0	0.1
41358	F	>1.035	7.5	2300	0	1	0	0	0	0	0	0.1
41359	F	>1.035	7.5	100	0	1	0	0	0	0	0	0.1
41360	F	QPS	Q	QPS	QPS	QPS	QPS	QPS	QPS	QPS	QPS	QPS
10000 JPSI												
41361	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41362	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41363	H	>1.035	7.5	2300	0	1	0	0	0	0	0	0.1
41364	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41365	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41366	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41367	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41368	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41369	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41370	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41371	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41372	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41373	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41374	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41375	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41376	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41377	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41378	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41379	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41380	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41381	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41382	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41383	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41384	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41385	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41386	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41387	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41388	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41389	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41390	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41391	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41392	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41393	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41394	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41395	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41396	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41397	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41398	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41399	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1
41400	H	>1.035	7.0	2300	0	1	0	0	0	0	0	0.1

0.10 ± 41 = Trace (trace only)
T.O. = Total organic
QPS = Quantitative sufficient
QSS = Quantitative not sufficient

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James Laveaga, Ph.D.

Study Director

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Date

Signature

Initials

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Table 16. Cont.

Group, Rat Number	Sex	Specific Gravity	Volume (ml)	pH	Protein (mg/ml)	Glycogen (ug/ml)	Ketone Acetone	Mitochondria	Blood Micros.	Biotinogen (ug/ml)
2000 RPM										
41327	H	21.035	2.0	6	>300	0	1	1	0	0.1
41328	H	21.032	6.0	6	>100	0	1	0	0	0.1
41329	H	21.035	1.3	6	>300	0	1	0	0	0.1
41330	H	21.031	2.3	6	5300	0	1	2	0	0.1
41331	H	21.035	2.3	6	5300	0	1	0	0	0.1
41332	H	21.035	1.0	6	5300	0	1	0	0	0.1
41333	H	21.031	1.0	5	5300	0	1	0	0	0.1
41334	H	21.035	1.1	6	5300	0	1	0	0	0.1
41335	H	21.033	1.0	6	5300*	0	1	2	0	1.0
41336	H	21.033	1.0	5	5300	0	1	0	0	0.1
41337	H	21.035	1.1	6	5300	0	1	1	0	1.0
41338	F	21.035	1.3	7	5300	0	1	0	0	0.1
41339	H	21.035	1.3	7	5300*	0	1	2	0	1.0
41340	H	21.033	1.0	6	5300*	0	1	0	0	0.1
41341	H	21.033	1.0	6	5300*	0	1	0	0	0.1
41342	F	21.033	1.3	6	100	0	1	1	0	0.1
41343	F	21.035	10.3	6	>300*	0	1	2	1	0.1
41344	F	21.035	1.5	6	100	0	1	1	0	0.1
41345	F	21.035	1.0	6	>300	0	1	1	0	1.0
41352	F	21.033	1.5	6	300	0	0	0	0	0.1
41353	F	21.035	1.5	6	100	0	0	0	0	1.0
41354	F	21.035	1.0	6	300	0	0	0	0	1.0
41355	F	21.035	0.5	6	300	0	0	0	0	1.0
41356	F	21.035	0.5	6	300	0	0	0	0	1.0
41357	F	21.035	1.0	7	300	0	0	2	0	1.0
41358	F	21.035	1.0	6	300	0	0	1	0	1.0
41359	F	21.035	1.0	6	100	0	0	1	0	0.1
41360	F	QMS	0	QMS	QMS	QMS	QMS	QMS	QMS	QMS
10,000 RPM										
41362	H	21.033	2.0	6	>300	0	1	1	0	0.1
41363	H	21.033	3.0	6	300	0	1	1	0	1.0
41365	H	21.035	1.5	6	300	0	1	1	0	0.1
41366	H	21.033	3.0	6	300	0	1	1	0	1.0
41368	H	21.035	2.0	6	300	0	1	1	0	0.1
41369	H	21.035	2.0	6	300	0	1	1	0	1.0
41370	H	21.033	3.0	7	300	0	1	1	0	1.0
41371	H	21.031	3.0	6	300	0	1	1	0	0.1
41372	H	21.033	1.0	6	300	0	1	1	0	1.0
41373	H	21.031	1.0	6	300	0	1	1	0	0.1
41374	H	21.031	1.0	6	300	0	1	1	0	0.1
41375	H	21.031	4.0	6	300	0	1	1	0	0.1
41376	H	21.031	4.0	6	300	0	1	1	0	0.1
41377	H	21.031	3.0	6	300	0	1	1	0	0.1
41378	H	21.031	3.0	6	300	0	1	1	0	0.1
41379	H	21.031	3.0	6	300	0	1	1	0	0.1
41380	H	21.031	3.0	6	300	0	1	1	0	0.1
41381	H	21.031	3.0	6	300	0	1	1	0	0.1
41382	H	21.033	0.5	6	300	0	1	1	0	0.1
41383	H	21.033	1.0	6	300	0	1	1	0	1.0
41384	H	21.033	1.0	6	300	0	1	1	0	1.0
41385	H	21.033	1.0	6	300	0	1	1	0	1.0
41386	H	21.033	0.5	6	300	0	1	1	0	1.0
41387	H	21.033	0.5	6	300	0	1	1	0	1.0
41388	H	21.033	0.5	6	300	0	1	1	0	1.0
41389	H	21.033	0.5	6	300	0	1	1	0	1.0
41390	H	21.033	0.5	6	300	0	1	1	0	1.0
41391	H	21.033	0.5	6	300	0	1	1	0	1.0
41392	H	21.033	0.5	6	300	0	1	1	0	1.0
41393	H	21.033	0.5	6	300	0	1	1	0	1.0
41394	H	21.033	0.5	6	300	0	1	1	0	1.0
41395	H	21.033	0.5	6	300	0	1	1	0	1.0
41396	H	21.033	0.5	6	300	0	1	1	0	1.0
41397	H	21.033	0.5	6	300	0	1	1	0	1.0
41398	H	21.033	0.5	6	300	0	1	1	0	1.0
41399	H	21.033	0.5	6	300	0	1	1	0	1.0
41400	H	21.033	0.5	6	300	0	1	1	0	1.0

*Gelat: 0 = negative
1 = + or positive
2 = ++
3 = +++
QMS = quantity not sufficient

0.16 g/dl = Trace (detectable value)
K.H. = turbid value
QMS = quantity not sufficient

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ED_005172C_00000011-00083

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Table 16. Cont.

Group	Cat Number	Appears since	Color	Gastric	Gastric				Epithelial			Erythrocytes			Bacteria		
					Triple Phos-	Divic Phos-	Calcium Oxalate	Amo-	Lympho-	Neutro-	Renal	Sperm	Yeast	Coccidioides	Bacilli	Other Cells	
<u>5000 Freq:</u>																	
41527	M	CD	Y	0	T	0	0	0	0	0	0	0	0	0	0	0	
41528	N	CD	Y	0	T	0	0	0	0	3	0	0	0	0	0	0	
41529	M	CD	Y	0	T	0	0	0	0	3	0	0	0	0	0	0	
41530	M	CD	Y	0	DT	0	0	0	0	4	2	0	0	0	0	0	
41533	M	CD	Y	0	T	0	0	0	0	0	0	0	0	0	0	0	
41536	M	CD	Y	0	T	0	0	0	0	0	0	0	0	0	0	0	
41538	M	CD	Y	0	T	0	0	0	0	0	0	0	0	0	0	0	
41539	M	CD	Y	0	X	0	0	0	0	0	0	0	0	0	0	0	
41540	M	CD	Y	0	X	0	0	0	0	3	1	0	0	0	0	0	
41541	M	CD	Y	0	X	0	0	0	0	0	0	0	0	0	0	0	
41542	F	CD	Y	0	X	0	0	0	0	0	0	0	0	0	0	0	
41543	F	CD	Y	0	DT	0	0	0	0	0	0	0	0	0	0	0	
41544	F	CD	Y	0	X	0	0	0	0	0	0	0	0	0	0	0	
41551	F	CD	Y	0	X	0	0	0	0	0	0	0	0	0	0	0	
41552	F	CD	Y	0	X	0	0	0	0	0	0	0	0	0	0	0	
41553	F	CD	Y	0	X	0	0	0	0	0	0	0	0	0	0	0	
41556	F	CD	Y	0	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	
41557	F	CD	Y	0	X	0	0	0	0	0	0	0	0	0	0	0	
41559	F	CD	Y	0	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	
41561	F	CD	Y	0	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	
<u>10,000 Freq:</u>																	
41562	M	CD	Y	0	T	0	0	0	0	0	0	0	0	0	0	0	
41563	M	CD	Y	0	DT	0	0	0	0	0	0	0	0	0	0	0	
41565	M	CD	Y	0	DT	0	0	0	0	0	0	0	0	0	0	0	
41566	M	CD	Y	0	DT	0	0	0	0	0	0	0	0	0	0	0	
41568	M	CD	Y	0	DT	0	0	0	0	0	0	0	0	0	0	0	
41570	M	CD	Y	0	DT	0	0	0	0	0	0	0	0	0	0	0	
41571	M	CD	Y	0	DT	0	0	0	0	0	0	0	0	0	0	0	
41572	M	CD	Y	0	DT	0	0	0	0	0	0	0	0	0	0	0	
41574	M	CD	Y	0	DT	0	0	0	0	0	0	0	0	0	0	0	
41580	M	CD	Y	0	DT	0	0	0	0	0	0	0	0	0	0	0	
41582	F	CD	Y	0	DT	0	0	0	0	0	0	0	0	0	0	0	
41583	F	CD	Y	0	DT	0	0	0	0	0	0	0	0	0	0	0	
41586	F	DT	Y	0	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	
41589	F	CD	Y	0	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	
41590	F	CD	Y	0	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	
41591	F	CD	Y	0	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	
41594	F	CD	Y	0	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	
41595	F	CD	Y	0	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	
41600	F	CD	Y	0	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	QMS	

Color: Y = Yellow
D = Dark yellow
G = Greenish
L = Low powered field
H = High powered field

QMS = Quantity not sufficient
QMS = Possible type
QMS = Superficial cryptitis
QMS = Epithelium over

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Standard Dicamba: 3

13-Week Dietary Toxicity Study in Rats

TABLE 17. Necropsy Observations, Terminal Sacrifice Deaths and Unscheduled Sacrifices, Males

Site Lesion	0 ppm (Control)		1000 ppm		3000 ppm		10,000 ppm	
	SAC	DOS	SAC	DOS	SAC	DOS	SAC	DOS
Number necropsied	20	0	20	0	20	0	20	0
No gross lesions	18	0	15	9	12	0	13	0
External								
incisors malaligned	2		2		4		2	
tip of tail missing			1					
preputial gland abscessed				1				
Eye								
discoloration around eye			1		1		1	
corneal opacity			1					
enlarged, protruding			1					
increased distance between pupil and cornea			1					
Spleen								
cyst					1			
Kidney								
hydronephrosis/pelvis dilated	4		1		1			
calculi	2		1					
focus			1					
Liver								
focus					1			
Urinary bladder								
calculi								
Ureters								
hydronephrosis	1							
Testes								
small/soft					1		1	

SAC - Terminal Sacrifice
DOS - Died on Study

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Standard dicamba: [3-Week Dietary Toxicity Study in Rats]

TABLE 17. cont. Necropsy Observations, Terminal Sacrifice Deaths and Unscheduled Sacrifice, Females

Site Lesion	0 ppm (Control)		1000 ppm		5000 ppm		10,000 ppm	
	SAC	DOS	SAC	DOS	SAC	DOS	SAC	DOS
Number necropsied	19	1	20	0	19	1	19	1
No gross lesions	16	0	18	0	19	0	14	1
External								
nose malaligned								
Incisors malaligned	1							
hair loss								
tip of tail missing								
emaciated								
ulceration, roof of mouth								
part of ear missing								
fractured, maxilla								
anogenital region, discoloration								
Eye								
discoloration around eye								
internal eye white	1							
Abdominal cavity								
visceral adhesion								
Spleen								
yellow areas			1					
Kidney								
hydronephrosis/pelvis dilated	1		1		1		1	
white gritty material, pelvis					1			
enlarged							1	
focus								1
Bladder								
calculi								
distended								1
Ureter								
hydroureter								1
Uterus								
hydrometra								1

SAC = Terminal Sacrifice
DOS = Died On Study

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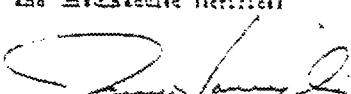
TABLE 18. Incidence of Non-neoplastic Histological Lesions,
Deaths and Unscheduled Sacrifices, TECMUS

Tissue Lesions	0 ppm (Control) DOSE*	1100 ppm DOSE*	5100 ppm DOSE*	10,300 ppm DOSE*
Eye (number examined)	1	1	3	1
anterior synechia	1			
Trachea (number examined)	1	2	3	1
tracheitis	1			
Thymus (number examined)	1	2	2	1
lymphoid cell depletion				
Spleen (number examined)	1	2	2	1
lymphoid cell depletion				
Kidneys (number examined)	1	2	2	1
venous stasis	1			
pyelonephritis/pyelitis				
Urinary bladder (number examined)	1	2	2	1
cystitis				

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*Deaths and unscheduled sacrifices

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James Landeglia, Ph.D.

Study Director

Date

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TABLE 18.

Incidence of Neoplastic and Non-neoplastic Lesions,
Deaths and Unscheduled Sacrifices. ~~RESULTS~~

Tissue Lesions	0 ppm (Control) DOSE*	1000 ppm DOSE*	5000 ppm DOSE*	12,000 ppm DOSE*
Eye (number examined)	1	0	0	1
interior strabismus	1	0	0	1
Trachea (number examined)	1	0	0	1
tracheitis	1	0	0	1
Thymus (number examined)	1	0	0	1
lymphoid cell depletion	1	0	0	1
Spine (number examined)	1	0	0	1
lymphoid cell depletion	1	0	0	1
Kidneys (number examined)	1	0	1	1
renous stasis	1	0	1	1
pyelonephritis/pyuria	1	0	1	1
Urinary bladder (number examined)	1	0	1	1
cystitis	1	0	1	1

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Deaths and unscheduled sacrifices

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 James Laregina, Ph.D. Date
 Study Director

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TABLE 18. Incidence of Non-neoplastic Microscopic Lesions,
Deaths and Unscheduled Sacrifices, FEMALES

Tissue Lesions	0 ppm (Control) DCS*	1000 ppm DCS*	5000 ppm DCS*	10,000 ppm DCS*
Eye (number examined)				
anterior synechia	1	0	0	1
Trachea (number examined)				
tracheitis	1	0	0	1
Thymus (number examined)				
lymphoid cell depletion	1	0	0	1
Spleen (number examined)				
lymphoid cell depletion	1	0	0	1
Kidneys (number examined)				
venous stasis	1	0	1	1
pyelonephritis/pyelitis	1	0	1	1
Urinary bladder (number examined)				
cytistis	1	0	1	1

*Deaths and unscheduled sacrifices

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Data Not Yet Available

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TABLE 19. Incidence of Non-neoplastic Microscopic Lesions, Terminal Sacrifice, MALES

Tissue Lesions	0 ppm (Control) SAC*	1000 ppm SAC*	3000 ppm SAC*	10,000 ppm SAC*
Thyroid (number examined)	20	0	0	20
interstitial lymphoid cell infiltration	1			
Pituitary (number examined)	20	0	0	13
adenohypophyseal cyst				1
Trachea (number examined)	19	0	0	20
trachitis	3			
Eyes (number examined)	20	2	0	19
keratitis		1		
posterior synechia		1		
Lung (number examined)	20	0	0	20
alveolar emphysema	9			20
lateral alveolar hemorrhage	11			8
interstitial pneumonia	1			1
Sternal marrow (number examined)	20	0	0	20
increased granulopoiesis	1			
Heart (number examined)	20	20	20	20
endothelial cell proliferation, myocardium	1			
myocarditis	1			
pericarditis				2
Hepatosplenic lymph node (number examined)	20	0	0	20
edema, medullary sinuses	1			
Liver (number examined)	20	20	20	20
cytoplasmic vacuolization, hepatocytes	17	16	16	14
portal mononuclear cell infiltration	4	1	1	1
congestion, portal vein			1	
cholangio fibrosis				1
lipoidal vacuolations, hepatocytes				1
Kidneys (number examined)	20	20	20	20
chronic nephritis	3		3	2
perivascular lymphoid cell infiltrations		2	3	1
micro calcification	1			
pyelonephritis	1			
pyrogranuloma		1		
pelvic dilatation		1		
hydronephrosis			1	
Urinary bladder (number examined)	20	0	0	19
mucosal hyperplasia	1			
squamous metaplasia	1			
cystitis	1			
Testes (number examined)	20	0	1	20
testicular atrophy	1		1	1
Prostate (number examined)	20	0	0	20
interstitial lymphoid cell infiltrations				2
purulent prostatitis				1
Miscellaneous				
Utricle				
mucosal hyperplasia	1			
uteritis	1			
Preputial gland (number examined)			1	
abacast			1	

*Terminal sacrifice

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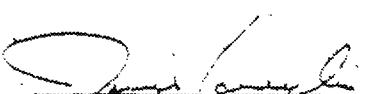
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TABLE 19. Cont. Incidence of Non-neoplastic Microscopic Lesions, Terminal Sacrifice, FEMALES

Tissue Lesions	0 ppm (Control) SAC*	1000 ppm SAC*	5000 ppm SAC*	10,000 ppm SAC*
Pituitary (number examined)				
adenohypophyseal cyst	19	0	0	19
Trachea (number examined)	19	0	0	19
tracheitis	1			
Lung (number examined)	19	0	0	19
intravascular hemorrhage	19	0	0	19
alveolar emphysema	19	0	0	19
interstitial pneumonia	1			1
Thymus (number examined)	19	0	0	19
hemorrhage	2			
Spleen (number examined)	19	1	0	19
extra medullary hematopoiesis, increased necrosis	1	1	0	2
Liver (number examined)	19	10	19	19
cytoplasmic vacuolations, hepatocytes	17	11	9	1
partial mononuclear cell infiltration				1
Kidney (number examined)	19	10	19	19
chronic nephritis	1	1	2	3
microcalcification	1	1		
dilated pelvis	1	0		
hydropsaphrosis			1	
pyelonephritis				1
Ovarus (number examined)	19	0	0	19
hydrocysts	4			6
Urinary bladder (number examined)	19	0	0	19
hyperplasia, lining epithelium				1
cystitis				1
Miscellaneous				
skin				
Urter				1
hyperplasia, lining epithelium				1
Maxillary region				1
purulent rhinitis				1



James Laveglia, Ph.D.

Study Director

Date

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Terminal sacrifice

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TABLE 19. Cont. Incidence of Non-neoplastic Microscopic Lesions, Terminal Sacrifice, FEMALES

Tissue Lesions	0 ppm (Control) SAC*	1000 ppm SAC*	5000 ppm SAC*	10,000 ppm SAC*
Pituitary (number examined)	19	0	0	19
adenohypophyseal cyst	1			
Trachea (number examined)	19	0	0	19
trachitis	1			
Lungs (number examined)	19	0	0	19
intravascular hemorrhage	19			19
livesular emphysema	19			19
interstitial pneumonia	2			1
Thymus (number examined)	19	0	0	19
hemorrhage	2			
Spleen (number examined)	19	1	0	19
extra medullary hematopoiesis, increased	3			2
necrosis		1		
Liver (number examined)	19	20	19	19
cytoplasmic vacuulations, hepatocytes	19	11	9	1
portal mononuclear cell infiltration		0		
Kidneys (number examined)	19	20	19	19
chronic nephritis	1		1	
microcalcification	1			3
dilated pelvis	1	1		
hydronephrosis			3	
pyelonephritis				1
Stomach (number examined)	19	0	0	19
hydrometra	4			6
Urinary bladder (number examined)	19	0	0	19
hyperplasia, lining epithelium				1
cystitis				1
Miscellaneous				
skin				
Ostia				
hyperplasia, lining epithelium				1
Nasillary region				
purulent rhinitis				1

*Terminal sacrifice

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TABLE 20. Pathological Observations, Deaths and Unscheduled Sacrifices

Group:	Lat:	Number	Sex	Comments:
<u>0 ppm (Control):</u>				
		41463	F	<p><u>Gross:</u> Internal right eye - White.</p> <p><u>Microscopic:</u></p> <p>Trachea - Subacute tracheitis, moderate. Eye, right eye - Anterior synchia, moderate. Kidneys - Acute venous stasis, bilateral, moderate.</p>
<u>3000 ppm:</u>				
		41360	F	<p><u>Gross:</u> Right kidney - Enlarged; hydronephrosis with numerous 1 to 3 mm yellow foci. Left kidney - Hydronephrosis with numerous 1 to 3 mm yellow foci. Urinary bladder - Markedly distended 3.0 cm diameter.</p> <p><u>Microscopic:</u></p> <p>Kidneys - Acute pyelonephritis, bilateral, moderate. Urinary bladder - Acute cystitis, moderate. Slight autolysis also seen.</p>
<u>10,000 ppm:</u>				
		41398	F	<p><u>Gross:</u> Maxilla - Fractured Ulceration, roof of mouth - Due to lower incisor. Around eyes and urogenital region - Black material. Emaciated. Slight autolysis.</p> <p><u>Microscopic:</u></p> <p>Thymus - Lymphoid cell depletion, moderate. Kidneys - Pyelitis, acute, unilateral, moderate. Spines - Lymphoid cell depletion, moderate.</p>

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TABLE II.

Pathological Observations, Terminal Sacrifice

Group, Cat. Number	Sex	Comments
<u>0 ppm (Control):</u>		
41442	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Testes - Testicular atrophy, unilateral, moderate. Lungs - Alveolar emphysema, slight.
41443	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Trachea - Subacute tracheitis, focal, slight. Liver - Perinuclear cytoplasmic vacuolation, diffuse in all hepatocytes, slight. Characterized by a clear vacuole in cytoplasm around the nucleus. Kidneys - Chorionic separation, multiple, microfocal, bilateral, very slight. Lung - Alveolar emphysema, slight. Intravascular hemorrhage, slight.
41444	M	<u>Gross:</u> Upper incisors - Malocclusion. <u>Microscopic:</u> Mesenteric lymph nodes - Edema, medullary sinuses, slight. Liver - Portal mononuclear cell infiltration, microfocal, very slight. Lung - Alveolar emphysema, slight. Heart - Focal endothelial cell proliferation, ventricular myocardium, focal, slight.
41445	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, slight.
41446	M	<u>Gross:</u> Kidneys - Light hydronephrosis. <u>Microscopic:</u> Kidneys - Perivascular lymphoid cell infiltrates, bilateral, slight. No nephrotic change evident. Liver - Portal mononuclear cell infiltration, very slight. Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, very slight. Lung - Alveolar emphysema, slight. Intravascular hemorrhage, slight.
41447	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, slight. Lung - Interstitial pneumonitis, patchy, slight. Alveolar emphysema, slight. Intravascular hemorrhage, slight.
41448	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuulations, hepatocytes, diffuse, very slight. Lung - Alveolar emphysema, slight.
41449	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuulation, hepatocytes, diffuse, slight. Heart - Subacute myocarditis, focal, slight. Lung - Intravascular hemorrhage, moderate. Alveolar emphysema, slight.

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TABLE II. Cont.

Pathological Observations, Terminal Sacrifice

Group: Lat. Number	Sex	Comments
<u>0 ppm (Control) Cont.</u>		
41450	M	<p><u>Gross:</u> Kidney - Calcull, pelvis dilated.</p> <p><u>Microscopic:</u></p> <ul style="list-style-type: none"> Trachea - Subacute tracheitis, moderate. Kidneys - Microscopic foci, renal pelvis, unilateral, very slight. Chronic hepatitis, microfocal, unilateral, very slight. Both findings in the same kidney. Liver - Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, very slight. Lung - Interstitial hemorrhage, moderate. Alveolar emphysema, slight.
41451	M	<p><u>Gross:</u> No gross lesions.</p> <p><u>Microscopic:</u></p> <ul style="list-style-type: none"> Liver - Perinuclear cytoplasmic vacuulations, hepatocytes, diffuse, slight. Lung - Alveolar emphysema, moderate. Interstitial hemorrhage, moderate.
41452	M	<p><u>Gross:</u> Kidneys - Calcull, slight pelvis dilation.</p> <p><u>Microscopic:</u></p> <ul style="list-style-type: none"> Liver - Portal mononuclear cell infiltration, very slight. Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, very slight. Lungs - Interstitial pneumonia, patchy, very slight. Alveolar emphysema, slight. Kidneys - Not remarkable. Examined two sections.
41453	M	<p><u>Gross:</u> No gross lesions.</p> <p><u>Microscopic:</u></p> <ul style="list-style-type: none"> Trachea - Subacute tracheitis, very slight. Liver - Perinuclear cytoplasmic vacuulations, hepatocytes, diffuse, very slight. Lungs - Interstitial pneumonia, patchy, slight. Interstitial hemorrhage, slight. Alveolar emphysema, slight.
41454	M	<p><u>Gross:</u> No gross lesions.</p> <p><u>Microscopic:</u></p> <ul style="list-style-type: none"> Liver - Portal mononuclear cell infiltration, very slight. Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, very slight. Lung - Interstitial hemorrhage, moderate. Alveolar emphysema, moderate.
41455	M	<p><u>Gross:</u> Upper incisors - Malaligned.</p> <p><u>Microscopic:</u></p> <ul style="list-style-type: none"> Kidneys - Chronic hepatitis, microfocal, unilateral, very slight. Liver - Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, slight. Lung - Interstitial hemorrhage, moderate. Alveolar emphysema, slight.
41456	M	<p><u>Gross:</u> Kidneys - Hydrocephrosis.</p> <p>Ureter - Hydroureter.</p> <p>Urinary bladder - Calcull.</p> <p><u>Microscopic:</u></p> <ul style="list-style-type: none"> Urinary bladder - Mucosal hyperplasia, diffuse, moderate. Squamous metaplasia, slight. Subacute cystitis, very slight. Kidneys - Chronic pyelonephritis, bilateral, moderate. Lung - Alveolar emphysema, slight. Miscellaneous: Ureter - Mucosal hyperplasia, moderate. Subacute urethritis, moderate. Sternal marrow - Increased granulopoiesis, slight.

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TABLE 21. Cont.

Pathological Observations, Terminal Sacrifice

Group, Lot Number	Sex	Comments
<u>0 ppm (Control) Cont.</u>		
41437	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Thyroid = Interstitial lymphoid cell infiltration, focal, unilateral, moderate. Liver = Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, very slight. Lung = Alveolar emphysema, slight.
41438	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver = Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, slight. Lung = Alveolar emphysema, slight.
41439	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver = Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, very slight. Lung = Intravascular hemorrhage, moderate. Alveolar emphysema, slight.
41460	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver = Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, slight. Lung = Alveolar emphysema, slight.
41461	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver = Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, slight. Lungs = Intravascular hemorrhage, slight. Alveolar emphysema, moderate.

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TABLE II. Cont.

Pathological Observations, Terminal Sacrifice

Group, Est Number	Sex	Comments
<u>0 ppm (Control) Cont.t</u>		
41462	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, slight. Lungs - Intralveolar hemorrhage, slight. Alveolar emphysema, slight.
41464	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuulations, hepatocytes, diffuse, slight. Lung - Intralveolar hemorrhage, slight. Alveolar emphysema, slight.
41465	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, slight. Lungs - Intralveolar hemorrhage, moderate. Alveolar emphysema, slight.
41466	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, very slight. Lungs - Intralveolar hemorrhage, severe. Alveolar emphysema, moderate.
41467	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Lungs - Interstitial pneumonia, patchy, very slight. Alveolar emphysema, slight.
41468	F	<u>Gross:</u> Upper incisors - Malaligned. <u>Microscopic:</u> Thymus - Hemorrhage, multifocal, moderate. Liver - Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, very slight. Lungs - Intralveolar hemorrhage, moderate. Alveolar emphysema, slight.
41469	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Trachea - Subacute trachitis, moderate. Spleen - Increased extramedullary hematopoiesis, slight. Liver - Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, slight. Lungs - Intralveolar hemorrhage, slight. Alveolar emphysema, moderate.
41470	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, very slight. Lungs - Alveolar emphysema, slight.
41471	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Thymus - Multifocal hemorrhage, slight. Liver - Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, slight. Lungs - Intralveolar hemorrhage, moderate. Alveolar emphysema, slight.

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TABLE 21, Cont.

Pathological Observations, Terminal Sacrifice

Group, Cat Number	Sex	Comments
<u>0 ppm (Control) Cont.</u>		
41472	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, slight. Lungs - Intraalveolar hemorrhage, slight. Alveolar emphysema, slight.
41473	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Pituitary - Adenohypophyseal cyst, present, solitary. Uterus - Hydrometra, slight. Liver - Perinuclear cytoplasmic vacuulations, hepatocytes, diffuse, slight. Lungs - Alveolar emphysema, slight.
41474	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Kidneys - Chronic nephritis, microfocal, unilateral, very slight. Liver - Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, very slight. Lungs - Alveolar emphysema, slight.
41475	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, very slight. Lungs - Intraalveolar hemorrhage, moderate. Alveolar emphysema, slight.
41476	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Uterus - Hydrometra, moderate. Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight. Lungs - Alveolar emphysema, slight.
41477	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Uterus - Hydrometra, slight. Spleen - Increased extramedullary hematopoiesis, slight. Lungs - Intraalveolar hemorrhage, moderate. Alveolar emphysema, slight.
41478	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Kidneys - Microcalcification, cortex, unilateral, very slight. Liver - Perinuclear cytoplasmic vacuulations, hepatocytes, diffuse, slight. Lungs - Alveolar emphysema, slight.
41479	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, moderate. Lungs - Intraalveolar hemorrhage, slight. Alveolar emphysema, slight.
41480	F	<u>Gross:</u> Kidney, right - Hydrocephrosis. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, very slight. Spleen - Increased extramedullary hematopoiesis, slight. Kidney - Dilated pelvis, unilateral, slight. Lungs - Interstitial pneumonitis, patchy, slight. Intraalveolar hemorrhage, slight. Alveolar emphysema, slight.

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TABLE II. Cont.

Pathological Observations, Terminal Sacrifices

Group: Rat Number	Sex	Comments
<u>0 ppm (Control) Cont.</u>		
41681	7	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Uterus - Hydrometra, slight. Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight. Lungs - Intralveolar hemorrhage, slight. Alveolar emphysema, slight.

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TABLE II, Cont.

Pathological Observations, Terminal Sacrifice

Group: Cat Number	Sex	Comments
<u>1000 ppm:</u>		
41482	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight.
41483	M	<u>Gross:</u> Upper incisor - Malaligned. Kidneys, left - 2 mm tan focus which invades parenchyme on cut surface. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight. Kidneys - Focal pyrogranuloma, chronic, severe, unilateral. Finding corresponds to the gross lesion described.
41484	M	<u>Gross:</u> Kidney, right - slight pelvic dilatation. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, slight. Kidneys - Perivascular lymphoid cell infiltration, unilateral, very slight. Pelvic dilatation, unilateral, very slight.
41485	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight.
41486	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, very slight.
41487	M	<u>Gross:</u> Left upper incisor - Malaligned. Left eye - Area around red. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, slight. Miscellaneous: Left eye - Not remarkable.
41488	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, slight.
41489	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Tissues - Not remarkable.
41490	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u>
41491	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Tissues - Not remarkable.
41492	M	<u>Gross:</u> Eyes - Corneal opacity. Left eye - Enlarged, protruded. Increased distance between pupil and cornea. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight. Miscellaneous: Eyes - Subscuta keratitis, bilateral, moderate. Posterior synchia, unilateral.

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TABLE II. Cont.

Pathological Observations, Terminal Sacrifice

Group, Lat Number	Sex	Comments
<u>1000 ppm Cont.:</u>		
41493	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight. Kidneys - Perivascular lymphoid cell infiltration, unilateral, very slight.
41494	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, slight.
41495	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Tissues - Not remarkable.
41496	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight.
41497	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Portal mononuclear cell infiltrations, very slight.
41498	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, slight.
41499	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, slight.
41500	M	<u>Gross:</u> Tip of tail - Missing. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight.
41501	M	<u>Gross:</u> Upper incisor - Malaligned. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight.

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TABLE II. Cont.

Pathological Observations, Terminal Sacrifice

Group, Lat Number	Sex	Comments
<u>1000 ppm Coal-tar</u>		
41302	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight.
41303	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight.
41304	F	<u>Gross:</u> Spleen - 1.0 cm diameter yellow area invading periphery. <u>Microscopic:</u> Liver, heart, kidney - Not remarkable. Miscellaneous: Spleen - Multifocal necrosis, moderate.
41305	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, diffuse, very slight.
41306	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Tissues - Not remarkable.
41307	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight.
41308	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, very slight.
41309	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Tissues - Not remarkable.
41310	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, very slight.
41311	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight.
41312	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Tissues - Not remarkable.
41313	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, slight.
41314	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Tissues - Not remarkable.
41315	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Tissues - Not remarkable.

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TABLE II, Cont.

Pathological Observations, Terminal Sacrifice

Group, Cat. Number	Sex	Comments
<u>1000 ppm Control:</u>		
41314	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight. Kidney - Microcalcification, cortex, unilateral, very slight.
41317	F	<u>Gross:</u> Kidney, left - Hydrocephrosis. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight. Kidneys - Not remarkable.
41318	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Tissues - Not remarkable.
41319	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Tissues - Not remarkable.
41320	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight.
41321	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Tissues - Not remarkable.

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TABLE 21. Cont.

Pathological Observations, Terminal Sacrifice

Group, Lat Number	Sex	Comments
<u>5000 ppm</u>		
41522	X	<u>Gross:</u> Liver - Malaligned. Kidney - Red area around red
		<u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, slight.
41523	X	<u>Gross:</u> No gross lesions.
		<u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight.
41524	X	<u>Gross:</u> Testes, right - Small, soft.
		<u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight. Kidney - Chronic nephritis, microfocal, unilateral, very slight. <u>Miscellaneous:</u> Testes - Testicular atrophy, diffuse, unilateral, moderate.
41525	X	<u>Gross:</u> Left upper incisor - Malaligned.
		<u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight. Kidneys - Perivascular lymphoid cell infiltration, unilateral, very slight.
41526	X	<u>Gross:</u> No gross lesions.
		<u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight.
41527	X	<u>Gross:</u> No gross lesions.
		<u>Microscopic:</u> Tissues - Not remarkable.
41528	X	<u>Gross:</u> No gross lesions.
		<u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight. Fetal mononuclear cell infiltration, slight.
41529	X	<u>Gross:</u> No gross lesions.
		<u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight.
41530	X	<u>Gross:</u> No gross lesions.
		<u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, slight. Kidney - Perivascular lymphoid cell infiltration, unilateral, very slight.
41531	X	<u>Gross:</u> Left ingenital region - Preputial gland abscess. Kidney, right - Hydronephrosis.
		<u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, slight. Kidney - Hydronephrosis, unilateral, slight. Chronic nephritis, unilateral, slight. Both findings in the same kidney. <u>Miscellaneous:</u> Preputial gland - Abscess present.
41532	X	<u>Gross:</u> Upper incisors - Malaligned. Right eye - Red area around.
		<u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse. Kidneys - Chronic nephritis, microfocal, bilateral, very slight. <u>Miscellaneous:</u> Section of skin around eye and lacrimal gland - Not remarkable.

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TABLE 21. Cont.

Pathological Observations, Terminal Sacrifice

Group, Lot Number	Sex	Comments
<u>5000 ppm Coal:</u>		
41533	X	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, slight.
41534	X	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight.
41535	X	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Tissues - Not remarkable.
41536	X	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight.
41537	X	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, slight.
41538	X	<u>Gross:</u> Spleen - Few 0.1 cm diameter clear cysts. <u>Microscopic:</u> Kidney - Perivascular lymphoid cell infiltrations, bilateral, very slight. Miscellaneous: Spleen - Not remarkable. Very little normal adipose tissue present on capsule.
41539	X	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Tissues - Not remarkable.
41540	X	<u>Gross:</u> Liver - 1 mm red focus. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, very slight. congestion, portal vein, slight, focal.
41541	X	<u>Gross:</u> Upper incisors - Molted. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight.

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TABLE 21, Cont.

Pathological Observations, Terminal Sacrifice

Group, Cat Number	Sex	Comments
<u>5000 ppm Cont.:</u>		
41342	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Tissues - Not remarkable.
41343	F	<u>Gross:</u> Kidney, right - Hydronephrosis. White gritty material in pelvis. <u>Microscopic:</u> Kidneys - Hydronephrosis, unilateral, slight. Chronic nephritis, microfocal, unilateral, very slight. Both findings in the same kidney.
41344	F	<u>Gross:</u> Forelimbs - Hair loss. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolization, hepatocytes, diffuse, slight. Miscellaneous: Skin - Not remarkable.
41345	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolization, hepatocytes, diffuse, very slight.
41346	F	<u>Gross:</u> Tip of tail - Missing. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolization, hepatocytes, diffuse, very slight.
41347	F	<u>Gross:</u> Upper incisors - Malaligned. both eyes - Area around eye, black material around. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolization, hepatocytes, diffuse, slight. Miscellaneous: Skin around eye - Not remarkable.
41348	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Tissues - Not remarkable.
41349	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Tissues - Not remarkable.
41350	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolization, hepatocytes, diffuse, slight.
41351	F	<u>Gross:</u> Upper incisors - Malaligned. <u>Microscopic:</u> Tissues - Not remarkable.
41352	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Tissues - Not remarkable.
41353	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Tissues - Not remarkable.

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TABLE II, cont.

Pathological Observations, Terminal Sacrifice

Group: Lat. Number	Sex	Comments
<u>5000 ppm Coal:</u>		
41354	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight.
41355	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolation, hepatocytes, diffuse, very slight.
41356	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Tissues - Not remarkable.
41357	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, very slight.
41358	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Perinuclear cytoplasmic vacuolations, hepatocytes, diffuse, slight.
41359	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Tissues - Not remarkable.
41361	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Tissues - Not remarkable.

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TABLE II, Cont.

Pathological Observations, Terminal Sacrifice

Group, Lat Number	Sex	Comments
<u>10,000 ppm:</u>		
41361	M	<u>Gross:</u> Testes, right - small, soft. <u>Microscopic:</u> Testes - Testicular atrophy, unilateral, moderate. Liver - Portal mononuclear cell infiltration, very slight. Lung - Alveolar emphysema, slight.
41363	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Kidneys - Chronic nephritis, microfocal, multiple, bilateral, very slight. Liver - Cholangiolitis, very slight, in one section only. Lung - Interstitial pneumonia, patchy, slight. Intravascular hemorrhage, slight. Alveolar emphysema, slight.
41364	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Lung - Alveolar emphysema, slight.
41365	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Lung - Intravascular hemorrhage, slight. Alveolar emphysema, slight.
41366	M	<u>Gross:</u> Upper incisors - Malaligned. <u>Microscopic:</u> Mesenteric lymph node - Edema, medullary sinuses, slight. Kidneys - Chronic nephritis, microfocal, unilateral, very slight. Lung - Alveolar emphysema, slight.
41367	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Prostate - Interstitial lymphoid cell infiltrations, slight. Liver - Parinuclear cytoplasmic vacuulations, hepatocytes, diffuse, slight. Lung - Alveolar emphysema, slight.
41368	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Lung - Interstitial pneumonia, patchy, slight. Intravascular hemorrhage, slight. Alveolar emphysema, slight. Heart - Chronic pericarditis, non-suppurative, slight. Lesion confined to heart base.
41369	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Liver - Lipoidal vacuulations, centrilobular hepatocytes, very slight. Few lobules involved. Lung - Alveolar emphysema, slight.
41370	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Pituitary - Adenohypophyseal cyst present. Lung - Alveolar emphysema, slight.

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TABLE II, Cont.

Pathological Observations, Terminal Sacrifice

Group, Lat Number	Sex	Comments
<u>10,000 ppm Cont.</u>		
41571	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Prostate - Interstitial lymphoid cell infiltrations, slight. Kidney - Perivascular lymphoid cell infiltrations, unilateral, very slight. Lung - Alveolar emphysema, slight. Intraalveolar hemorrhage, slight.
41572	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Lung - Alveolar emphysema, slight.
41573	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Lung - Intraalveolar hemorrhage, slight. Alveolar emphysema, slight.
41574	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Lung - Alveolar emphysema, slight.
41575	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Lung - Alveolar emphysema, slight.
41576	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Pituitary - Adenohypophyseal cyst present, very small. Lung - Alveolar emphysema, slight.
41577	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Lung - Intraalveolar hemorrhage, moderate. Alveolar emphysema, slight.
41578	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Lung - Alveolar emphysema, slight.
41579	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Lung - Intraalveolar hemorrhage, moderate. Alveolar emphysema, slight.
41580	M	<u>Gross:</u> Upper incisors - Malaligned. Right eye - Area around red. <u>Microscopic:</u> Prostate - Purulent prostatitis, focal, very slight. Lung - Alveolar emphysema, slight. Heart - Subacute pericarditis, focal, slight.
41581	M	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Lung - Intraalveolar hemorrhage, moderate. Alveolar emphysema, slight.

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TABLE II. Cont.

Pathological Observations, Terminal Sacrifice

Group, Lat Number	Sex	Comments
<u>10,000 ppm Cont.</u>		
41582	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Lungs - Intralveolar hemorrhage, slight. Alveolar emphysema, slight.
41583	F	<u>Gross:</u> Uterus - slight hydrometra. <u>Microscopic:</u> Uterus - Hydrometra, moderate. Lung - Alveolar emphysema, slight.
41584	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Uterus - Hydrometra, moderate. Lung - Alveolar emphysema, slight.
41585	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Lungs - Intralveolar hemorrhage, moderate. Alveolar emphysema, moderate. Liver - Perisinusoidal cytoplasmic vacuolation, hepatocytes, diffuse, very slight.
41586	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Kidneys - Microcalcification, cortex, unilateral, very slight. Lungs - Intralveolar hemorrhage, slight. Alveolar emphysema, slight.
41587	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Uterus - Hydrometra, moderate. Lungs - Intralveolar hemorrhage, slight. Alveolar emphysema, slight.
41588	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Lungs - Interstitial pneumonia, patchy, very slight. Intralveolar hemorrhage, slight. Alveolar emphysema, slight.
41589	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Lungs - Alveolar emphysema, slight.
41590	F	<u>Gross:</u> Limbs - Hair loss. Left eye - Red area around. <u>Microscopic:</u> Kidneys - Microcalcification, cortex, unilateral, very slight. Lungs - Alveolar emphysema, slight. Left eye - Histologically not remarkable. Miscellaneous: Skin from limbs - Not remarkable.
41591	F	<u>Gross:</u> No gross lesions. <u>Microscopic:</u> Lungs - Intralveolar hemorrhage, slight. Alveolar emphysema, slight.

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TABLE II. Cont.

Pathological Observations, Terminal Sacrifice

Group, Cat Number	Sex	Comments
<u>10,000 ppm Cont.:</u>		
41592	?	<p><u>Gross:</u> Liver - Adhered to right kidney. Uterus, right - Hydrometra. Kidney, right - Hydronephrosis. Urinary bladder - Calculi.</p> <p><u>Microscopic:</u> Urinary bladder - Hyperplasia with squamous metaplasia, lining epithelium, moderate, diffuse. Subacute cystitis, very slight. Kidneys - Subacute pyelonephritis, bilateral, moderate. Lungs - Intravascular hemorrhage, moderate. Alveolar emphysema, slight. Liver - Not remarkable. <u>Miscellaneous:</u> Ovaries - Hyperplasia, lining epithelium, moderate.</p>
41593	?	<p><u>Gross:</u> Nose, upper incisors - Malaligned. Eyes - Red area around. Roof of mouth - Ulcerated. Maxilla - Fractured. Emaciated.</p> <p><u>Microscopic:</u> Lungs - Intravascular hemorrhage, slight. Alveolar emphysema, slight. <u>Miscellaneous:</u> Cross section of maxillary region - Chronic purulent rhinitis, severe. No evidence of fracture seen.</p>
41594	?	<p><u>Gross:</u> No gross lesions.</p> <p><u>Microscopic:</u> Ovaries - Hydrometra, slight. Lungs - Alveolar emphysema, slight.</p>
41595	?	<p><u>Gross:</u> No gross lesions.</p> <p><u>Microscopic:</u> Ovaries - Hydrometra, moderate. Lungs - Alveolar emphysema, slight.</p>
41596	?	<p><u>Gross:</u> No gross lesions.</p> <p><u>Microscopic:</u> Spleen - Increased extramedullary hematopoiesis, slight. Lungs - Alveolar emphysema, slight.</p>
41597	?	<p><u>Gross:</u> No gross lesions.</p> <p><u>Microscopic:</u> Lungs - Alveolar emphysema, slight.</p>
41598	?	<p><u>Gross:</u> No gross lesions.</p> <p><u>Microscopic:</u> Lungs - Intravascular hemorrhage, slight. Alveolar emphysema, slight.</p>
41599	?	<p><u>Gross:</u> Part of left ear - Missing.</p> <p><u>Microscopic:</u> Uterus - Slight hydrometra.</p>
41600	?	<p><u>Gross:</u> No gross lesions.</p> <p><u>Microscopic:</u> Uterus - Hydrometra, moderate. Spleen - Increased extramedullary hematopoiesis, slight. Lungs - Alveolar emphysema, slight.</p>
41601	?	<p><u>Gross:</u> No gross lesions.</p> <p><u>Microscopic:</u> Kidneys - Microcalcifications, cortex, bilateral, very slight. Liver - Portal mononuclear cell infiltration, very slight. Lungs - Intravascular hemorrhage, slight. Alveolar emphysema, slight.</p>

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TABLE II.

Individual Organ Weights

Group, Lat Number	Sex	Body Wt. g	Liver g	Kidneys g	Tissues/ Ovaries mg	Heart g	Brain/ Stem g
<u>0 ppm (Control):</u>							
41442	M	450	12.66	3.12	3.69	1.24	2.16
41443	M	287	18.98	3.07	4.05	1.44	2.16
41444	M	474	13.02	2.50	3.28	1.48	1.97
41445	M	589	21.92	3.54	4.23	1.47	2.31
41446	M	490	13.91	3.10	3.19	1.46	2.19
41447	M	447	15.13	3.12	3.33	1.51	2.03
41448	M	519	18.08	3.12	4.02	1.49	2.04
41449	M	527	16.88	3.12	3.75	1.25	2.17
41450	M	488	17.91	3.51	3.64	1.46	2.04
41451	M	430	17.60	3.77	3.54	1.65	2.17
41452	M	503	17.21	3.60	3.17	1.68	2.09
41453	M	437	13.01	3.59	3.47	1.41	2.01
41454	M	428	12.21	2.61	3.21	1.05	1.67
41455	M	434	14.13	2.71	3.75	1.20	2.06
41456	M	478	15.08	4.23	3.08	1.41	2.58
41457	M	485	13.84	2.39	3.55	1.62	1.99
41458	M	595	20.91	3.96	3.88	1.77	2.33
41459	M	523	15.41	2.97	3.83	1.43	2.20
41460	M	467	13.63	2.72	3.66	1.41	2.20
41461	M	621	20.80	3.82	4.02	1.86	2.32
41462	F	256	8.89	1.94	1.56	1.03	2.01
41464	F	295	10.18	2.06	1.77	0.91	2.06
41465	F	253	7.89	1.77	1.40	0.48	2.03
41466	F	274	10.01	2.04	1.18	1.14	2.02
41467	F	240	7.48	1.60	1.35	0.85	1.89
41468	F	291	8.74	1.32	1.82	1.05	2.00
41469	F	252	7.30	1.73	8	0.96	2.05
41470	F	290	8.81	1.90	1.40	0.93	2.07
41471	F	278	9.68	1.84	1.32	0.99	2.01
41472	F	282	8.54	1.77	1.80	0.93	2.01
41473	F	477	8.84	1.96	1.57	0.96	2.02
41474	F	284	8.40	1.88	1.31	0.94	1.89
41475	F	282	8.57	2.17	85	1.13	2.04
41476	F	314	8.84	1.99	1.53	0.42	2.05
41477	F	274	8.16	1.85	1.33	0.68	1.90
41478	F	313	11.27	2.66	1.27	1.05	2.17
41479	F	258	8.22	1.79	1.60	0.94	1.86
41480	F	298	8.22	1.73	82	0.97	1.98
41481	F	258	8.72	1.79	1.23	1.14	2.00

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*Ovary weight inadvertently missed at necropsy

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TABLE 22, Cont.

Individual Organ Weights

Group/ Lat Number	Sex	Body Wt. g	Liver g	Kidneys g	Testes/ Ovaries mg	Heart g	Brain/ Spine g
<u>1000 ppm:</u>							
41482	M	408	10.11	2.43	3.74	1.12	1.11
41483	M	451	13.51	3.20	3.31	1.32	1.89
41484	M	482	16.43	3.40	3.56	1.49	1
41485	M	489	14.30	3.45	3.99	1.51	1.29
41486	M	582	17.04	3.28	3.66	1.67	1.34
41487	M	524	15.33	3.29	3.34	1.40	1.16
41488	M	426	13.71	2.95	3.38	1.34	1.11
41489	M	482	12.98	3.12	3.84	0.17	1.11
41490	M	429	12.63	2.92	3.63	1.36	1.85
41491	M	445	12.17	3.03	3.75	1.43	1.94
41492	M	536	17.38	3.47	3.93	1.68	1.01
41493	M	483	15.54	3.50	3.68	1.71	1.35
41494	M	534	18.87	3.37	3.53	1.40	1.23
41495	M	468	13.82	2.88	3.40	1.52	1.02
41496	M	540	15.20	3.17	3.76	1.59	1.20
41497	M	486	14.08	3.23	3.59	1.59	1.25
41498	M	534	18.64	3.66	3.18	1.58	1.02
41499	M	526	17.53	3.98	3.90	1.44	1.32
41500	M	501	15.43	3.03	3.54	1.43	1.16
41501	M	506	16.67	3.41	3.66	1.40	1.99
41502	F	286	8.79	2.05	100	1.05	1.95
41503	F	181	9.18	2.12	160	1.00	2.03
41504	F	285	11.79	2.10	123	1.05	1.14
41505	F	300	8.79	2.09	105	0.98	2.05
41506	F	328	8.59	2.16	165	0.93	2.13
41507	F	243	7.93	1.85	114	0.39	1.84
41508	F	261	7.85	1.81	115	0.17	1.04
41509	F	251	6.91	1.92	104	1.03	1.93
41510	F	250	8.43	1.98	118	0.58	1.90
41511	F	243	7.12	1.69	132	0.42	1.88
41512	F	280	8.30	1.83	141	1.14	1.49
41513	F	307	9.93	2.20	124	0.56	2.06
41514	F	287	7.73	1.90	143	1.03	2.09
41515	F	300	9.23	2.21	125	0.19	2.04
41516	F	321	10.84	2.14	153	1.09	2.05
41517	F	258	8.38	1.94	135	0.56	2.02
41518	F	253	7.18	1.95	95	0.33	1.92
41519	F	258	8.21	2.19	161	1.02	2.04
41520	F	318	9.53	2.16	107	1.37	2.01
41521	F	265	7.67	1.74	129	1.37	2.07

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*Brain weight inadvertently misrecorded at necropsy

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TABLE 22. Cont.

Individual Organ Weights

Group, Cat Number	Sex	Body Wt. g	Testes/ Ovary, g				Brain/ Stem g
			Liver g	Kidneys g	Burs g		
<u>5000 ppm:</u>							
41322	M	461	13.33	3.54	3.73	1.37	2.30
41323	M	406	14.36	2.90	4.04	1.46	2.18
41324	M	502	16.22	3.31	5.31	1.34	2.30
41325	M	296	17.26	3.31	5.59	1.35	2.21
41326	M	550	15.51	3.49	3.83	1.60	2.30
41327	M	460	15.27	2.81	3.85	1.30	1.97
41328	M	473	14.10	3.23	3.78	1.49	2.13
41329	M	529	15.80	3.49	3.99	1.62	2.15
41330	M	453	14.56	3.39	4.02	1.28	2.10
41331	M	530	17.63	3.94	3.67	1.61	2.23
41332	M	514	17.00	3.60	3.83	1.53	2.16
41333	M	484	14.95	3.23	3.85	1.49	2.23
41334	M	388	13.12	3.08	3.42	1.12	2.10
41335	M	530	14.56	3.12	3.43	1.38	2.17
41336	M	431	13.38	3.09	4.06	1.25	*
41337	M	496	13.23	3.52	2.73	0.62	2.14
41338	M	453	12.99	3.09	3.64	1.40	*
41339	M	486	13.29	2.81	3.69	1.76	2.10
41340	M	484	15.03	3.32	3.73	1.50	2.32
41341	M	433	13.20	3.02	3.20	1.40	2.08
41342	F	312	9.03	1.84	1.22	0.97	1.06
41343	F	269	8.23	2.08	1.27	1.07	1.82
41344	F	298	10.17	2.12	1.24	1.16	1.85
41345	F	294	9.53	1.97	1.36	0.92	1.76
41346	F	295	8.66	2.07	1.22	1.04	2.02
41347	F	295	8.63	1.95	1.25	0.94	2.06
41348	F	292	9.02	2.17	1.35	0.94	1.11
41349	F	243	8.75	1.83	1.43	0.94	1.73
41350	F	297	9.78	1.86	1.23	0.89	1.91
41351	F	280	7.88	1.83	1.71	1.34	2.07
41352	F	258	7.20	1.88	1.31	0.84	1.06
41353	F	248	7.04	1.56	1.10	0.88	1.83
41354	F	279	9.60	2.13	1.52	0.95	2.10
41355	F	269	8.24	1.61	1.27	0.84	1.76
41356	F	259	8.13	2.20	1.43	0.99	2.13
41357	F	283	10.15	1.80	1.41	0.99	1.82
41358	F	343	12.45	2.34	1.28	1.19	1.86
41359	F	279	8.30	1.91	1.04	1.06	1.96
41361	F	263	8.21	1.73	1.68	0.72	1.95

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*Brain weight inadvertently misrecorded at necropsy

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TABLE 22, Cont.

Individual Organ Weights

Group, Cat Number	Sex	Body Wt. g	Liver g	Kidneys g	Ovaries/ testes g	Heart g	Brain/ Stom g
<u>10,000 rpm:</u>							
41562	M	452	15.89	3.05	2.83	1.21	1.98
41563	M	417	14.48	2.86	3.53	1.28	2.10
41564	M	500	20.84	3.24	3.61	1.55	2.11
41565	M	470	15.11	2.85	3.81	1.21	2.06
41566	M	440	16.16	3.23	3.93	1.39	2.07
41567	M	442	16.89	2.84	3.66	1.38	2.05
41568	M	473	16.64	2.90	3.58	1.38	2.12
41569	M	453	17.30	2.84	3.63	1.36	2.03
41570	M	400	13.31	2.73	3.91	1.20	1.88
41571	M	491	16.83	3.07	3.61	1.45	2.21
41572	M	398	13.69	2.43	3.73	1.32	2.01
41573	M	494	17.92	2.93	3.95	1.46	2.15
41574	M	499	17.67	2.98	3.80	1.34	2.14
41575	M	480	16.47	2.89	3.56	1.23	2.13
41576	M	546	18.30	3.35	3.82	1.72	2.24
41577	M	394	14.84	2.83	3.94	1.24	2.10
41578	M	428	14.86	3.03	3.27	1.35	1.95
41579	M	464	17.98	3.22	3.60	1.22	2.21
41580	M	498	17.19	3.42	3.71	1.38	2.28
41581	M	458	18.18	2.84	3.06	1.27	2.06
41582	F	253	9.02	1.85	1.51	0.97	1.16
41583	F	268	8.68	1.69	1.48	0.77	1.20
41584	F	261	9.20	1.83	1.82	0.83	1.24
41585	F	283	10.95	1.85	1.54	0.97	2.03
41586	F	263	8.86	1.83	1.11	0.91	2.06
41587	F	258	9.74	1.90	1.19	0.91	2.00
41588	F	278	10.23	1.91	1.27	0.63	1.88
41589	F	278	7.96	1.73	1.41	0.89	1.99
41590	F	280	9.91	2.05	1.23	0.87	1.97
41591	F	288	10.72	2.17	1.68	0.90	1.95
41592	F	292	9.60	2.11	1.41	1.02	2.03
41593	F	160	5.96	1.48	0.53	0.75	1.79
41594	F	274	9.23	1.78	1	0.68	2.14
41595	F	254	8.22	1.78	1.19	0.93	1.14
41596	F	248	8.22	1.80	1.14	0.96	1.00
41597	F	292	10.49	2.02	1.34	0.93	2.00
41599	F	236	8.26	1.63	1.08	0.65	1.86
41600	F	263	8.24	1.74	1.35	0.94	1.01
41601	F	259	8.68	1.99	1.29	0.83	1.96

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*ovary weight inadvertently missed at necropsy

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TABLE 23. Absolute (Grams) and Relative (% Body Weight) Organ Weights, Terminal Sacrifice

Group, Sex	Body Wt. g	Liver		Kidneys		Testes/ E. Ovaries		Heart		Brain/ Stem	
		g	%	g	%	mg	% X10	g	%	g	%
0 ppm (Control):											
M	4.84	16.22	3.41	3.25	0.68	3.62	1.47	0.31	2.12	0.45	
F	2.68	8.81	3.11	1.88	0.67	1.43	0.50	0.92	0.39	2.00	0.71
1,000 ppm:											
M	4.92	14.97	3.03	3.24	0.66	3.65	1.67	1.44	0.29	2.07	0.42
F	2.79	8.62	3.09	2.00	0.72*	1.29	0.46	0.96	0.34	1.98	0.72
5,000 ppm:											
M	4.68	15.29	3.32	3.26	0.71	3.67	1.98	1.39	0.30	2.18	0.47
F	2.82	8.90	3.15	1.96	0.70	1.34	0.48	0.93	0.35	1.91	0.69
10,000 ppm:											
M	4.60	16.56	3.60	2.98*	0.65	3.63	1.96	1.35	0.30	2.09	0.46
F	2.63	9.06	3.46**	1.85	0.71	1.35	0.51	0.87	0.34	1.88	0.73

Group mean relative organ weights shown in this table were calculated by averaging the individually calculated relative organ weights.

*Significantly different from Control group mean, p<0.05

**Significantly different from Control group mean, p<0.01

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TABLE 24. Tissue Inventory of Histomorphologic Observations, Terminal Sacrifice

Group, Ref. Number	SEX	0 ppm (Control)																				
		M	H	N	M	H	N	M	H	N	M	H	N	M	H	N	M	H	N	M	H	N
Pituitary		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sciatic nerve		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Adrenals		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Thyroids		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Parathyroids		-	1	1	-	1	1	1	1	1	-	1	-	1	1	1	-	1	1	-	1	1
Trachea		1	x	1	1	1	1	x	1	x	1	1	1	1	1	x	1	1	1	1	1	1
Esophagus		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Testes/Ovaries		x	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Prostate/Uterus		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cervix uteri																						
Gastric		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Small intestines*		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Large intestines**		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Urinary bladder		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Brain		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Spinal cord		-	1	1	-	1	1	1	1	1	-	1	1	1	-	1	1	1	1	1	1	1
Eye		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Skeletal muscle		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mesenteric lymph node		1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pancreas		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Salivary gland		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Liver		1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Spleen		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Kidneys		1	x	1	x	1	x	1	x	1	x	1	x	1	x	1	x	1	x	1	x	1
Heart		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Lungs		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Sternum (marrow)		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Miscellaneous																						

Code: 1 - tissue not remarkable
x - tissue remarkable
- tissue not available
* - tissue autolyzed
*Duodenum, jejunum and ileum
**Cecum and colon
***Died on study

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TABLE 14, Cont. Tissue Inventory of Histomorphologic Observations, Terminal Sacrifice

Group	Rat Number	Sex	1000 ppm																							
			M	H	N	H	N	H	N	H	N	H	N	H	N	H	N	H	N	H	N	H	N	H	N	
Kidneys	41462	M																								
	41463																									
	41464																									
	41465																									
	41486																									
	41487																									
	41488																									
	41489																									
	41490																									
	41491																									
	41492																									
	41493																									
	41494																									
	41495																									
	41496																									
	41497																									
	41498																									
	41499																									
	41500																									
	41501																									
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	41503																									
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	41506																									
	41507																									
	41508																									
	41509																									
	41510																									
	41511																									
	41512																									
	41513																									
	41514																									
	41515																									
	41516																									
	41517																									
	41518																									
	41519																									
	41520																									
	41521																									

Code: I - tissue not remarkable
 x - tissue remarkable
 ** tissue not available
 * - tissue autolyzed

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TABLE 24, Cont. Tissue Inventory of Histopathologic Observations, Terminal Sacrifice

Group, Rat Number	Sex	5000 ppm																													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Kidneys		1	1	x	x	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Liver		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Heart		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Miscellaneous		x		x	1		1			1			1																		
Urinary Bladder																															

Code: 1 - tissue not remarkable
x - tissue remarkable
- - tissue not available
* - tissue autolyzed
*Bled on study

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TABLE 2A, Cont. Tissue Inventory of Histomorphologic Observations, Terminal Sacrifice

Group, Tissue	Race, Number	IC-3002 2nd																															
		H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H		
Pituitary	41562	1	1	1	1	1	1	1	x	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Sciatic nerve	41563	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Arenals	41564	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Thyroids	41565	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Parathyroids	41566	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Trachea	41567	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Esophagus	41568	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Testes/Ovaries	41569	x	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Prostate/Uterus	41570	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Cervix uteri	41571	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Stomach	41572	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Small intestine*	41573	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Large intestine**	41574	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Urinary bladder	41575	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Brain	41576	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Spinal cord	41577	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Eye	41578	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Skeletal muscle	41579	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Mesenteric lymph node	41580	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Thymus	41581	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Pancreas	41582	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Salivary gland	41583	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Liver	41584	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Spleen	41585	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Kidneys	41586	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Heart	41587	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Lungs	41588	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
Stomach (marrow)	41589	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Miscellaneous	41590	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		

Codes: 1 - tissue not remarkable
x - tissue remarkable
- - tissue not available
* - tissue autolyzed
*Duodenum, jejunum and ileum
**Cecum and colon
***Died on study

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APPENDIX I
Quality Assurance Inspections

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Dicamba 13-Week Dietary Toxicity Study in Rats with Dicamba

Quality Assurance Inspections

<u>Dates of Inspections</u>	<u>Dates of Reports to Management</u>
12/10/79	1/14/79
12/17/79	3/18/80
12/24/79	3/19/80
5/ 3/80	3/21/80
3/14/80	3/31/80
3/17/80	4/ 7/80
3/21/80	5/22/80
5/16/80	7/ 1/80
5/20/80	10/24/80
5/22/80	
5/23/80	
10/25/80	

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APPENDIX II
Analytical Method

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ANALYTICAL METHOD

I. REAGENTS

1. Diethyl ether
2. 10% H₂SO₄ - 10 ml conc. H₂SO₄ + 90 ml distilled water
3. 5% aqueous NaHCO₃
4. Conc. HCl
5. 1 N Methanolic HCl (8.3 ml concentrated HCl in 100 ml methanol)
6. Hexane
7. Ethereal diazomethane prepared from Diazald® Aldrich Chemical Co.)

II. EXTRACTION

1. Extract 10 g sample with 0.5 ml of 10% H₂SO₄ in 200 ml ether in a blender for 5 mins.
2. Filter extract under vacuum through whatman #4 filter paper. Wash blender jar with additional 50 ml ether and filter. Combine filtrates.
3. Place extract in a 250 ml separatory funnel. Extract ether layer with 3 x 25 ml of 5% NaHCO₃. Collect aqueous layer in a Erlenmeyer flask. Discard ether layer.
4. Acidify aqueous phase to pH <1 with conc. HCl (requires 6 to 8 ml). Transfer this acidified aqueous phase to same separatory funnel and partition with 3 x 50 ml ether.
5. Collect the combined ether extracts in either a 200 ml volumetric flask (Groups II and IV) or a 250 ml volumetric flask (Group III). Bring to volume with diethyl ether. Dilute aliquots of the well mixed extracts with ether to yield a theoretical concentrations of 10 µg test article/ml; thus Group II; dilute 1.0 ml to 5.0 ml; Group III; dilute 5.0 ml to 100 ml; Group IV; dilute 1.0 ml to 5.0 ml.

III. METHYLATION

1. Transfer a 1.0 ml aliquot from the 10 µg test article/ml extracts to a 250 ml flat bottom flask. Add 10 to 15 ml of ethereal diazomethane and 3 drops of methanolic HCl. Mix well and allow the solution to stand overnight in a hood.
2. Add 1 ml of toluene and concentrate the extract to 1 ml using a rotary vacuum evaporator.

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3. Transfer the residue to a 200 ml volumetric flask with multiple hexane rinses and bring to volume with hexane.

IV. PREPARATION OF STANDARD

1. Weigh accurately about 10 mg of the test article and dissolve in 100 ml of toluene using a Class A volumetric pipette. Dilute a 1.0 ml aliquot to 10 ml with toluene to yield a 10 $\mu\text{g}/\text{ml}$ standard solution (working standard).
2. Methylate a 1.0 ml aliquot of the working standard concurrently with sample extracts.
3. Proceed as described in III,3.

V. GAS CHROMATOGRAPHIC ANALYSIS

Instrument - Varian 2400 or equivalent equipped with 63Ni electron capture detector.

Column - 6'x4 mm glass column packed with 10% OV-17 on gas chrom.

Temperatures - Oven - 150°C

Detector - 280°C

Injector - 285°C

Flow rate (N_2) - Carrier 38 ml/min

VI. CALCULATIONS

$\frac{\text{Peak Height Sample}}{\text{Peak Height Standard}} \times \text{concentration of standard } (\mu\text{g}/\text{ml}) \times$

Dilution factor $\times \frac{1}{\text{Sample Weight (g)}} * \text{ppm test article found}$

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APPENDIX III
Homogeneity

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STUDY TITLE: 13-Week Dietary Toxicity Study in Rats

Summary of Prepared Test Material Analyses

Study Week Homogeneity

Preparation Date 12/7/79

Sampling Date 12/7/79

Dosage Level ppm	Sample Position	Replicate Number	Concentration (g/kg)		Analysis Date
			Theoretical	Found and Difference from theoretical (%)	
1000	10 ⁴ -T	1	1.0	0.667 (-33)	12/20/79
1000	10 ⁴ -T	2	1.0	0.863 (-14)	12/20/79
1000	10 ⁴ -M	1	1.0	0.613 (-39)	12/20/79
1000	10 ⁴ -M	2	1.0	0.800 (-20)	12/20/79
1000	10 ⁴ -B	1	1.0	0.800 (-20)	12/20/79
1000	10 ⁴ -B	2	1.0	0.787 (-21)	12/20/79
5000	10 ⁴ -T	1	5.0	4.313 (-14)	12/20/79
5000	10 ⁴ -T	2	5.0	2.533 (-49)	12/20/79
5000	10 ⁴ -M	1	5.0	4.250 (-15)	12/20/79
5000	10 ⁴ -M	2	5.0	3.875 (-22)	12/20/79
5000	10 ⁴ -B	1	5.0	3.063 (-39)	12/20/79
5000	10 ⁴ -B	2	5.0	3.929 (-21)	12/20/79
10,000	10 ⁴ -T	1	10.0	6.900 (-31)	12/20/79
10,000	10 ⁴ -T	2	10.0	5.100 (-49)	12/20/79
10,000	10 ⁴ -M	1	10.0	5.100 (-49)	12/20/79
10,000	10 ⁴ -M	2	10.0	5.900 (-41)	12/20/79
10,000	10 ⁴ -B	1	10.0	10.630 (+ 6)	12/29/79
10,000	10 ⁴ -B	2	10.0	10.300 (+ 3)	12/29/79
1000	20 ⁴ -T	1	1.0	0.576 (-42)	12/20/79
1000	20 ⁴ -T	2	1.0	0.840 (-16)	12/20/79
1000	20 ⁴ -M	1	1.0	1.170 (+17)	12/20/79
1000	20 ⁴ -M	2	1.0	0.790 (-21)	12/20/79
1000	20 ⁴ -B	1	1.0	0.970 (+ 3)	12/20/79
1000	20 ⁴ -B	2	1.0	0.660 (-34)	12/20/79
5000	20 ⁴ -T	1	5.0	4.665 (- 7)	12/23/79
5000	20 ⁴ -T	2	5.0	3.806 (-24)	12/23/79
5000	20 ⁴ -M	1	5.0	3.938 (-21)	12/23/79
5000	20 ⁴ -M	2	5.0	3.936 (+19)	12/23/79

Mixing time in minutes

T - Top

M - Middle

B - Bottom

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STUDY TITLE: 13-Week Dietary Toxicity Study in Rats

Summary of Prepared Test Material Analyses

Study Week: Homogeneity

Preparation Date 12/7/79

Sampling Date 12/7/79

Dosage Level ppm	Sample Position	Replicate Number	Concentration (g/kg)		
			Theoretical	Found and Difference from theoretical (%)	Analysis Date
5000	20 ^a -B	1	5.0	5.631 (+13)	12/23/79
5000	20 ^a -B	2	5.0	5.309 (+ 6)	12/23/79
10,000	20 ^a -T	1	10.0	9.330 (- 7)	12/23/79
10,000	20 ^a -T	2	10.0	9.545 (- 5)	12/23/79
10,000	20 ^a -M	1	10.0	8.042 (-20)	12/23/79
10,000	20 ^a -M	2	10.0	9.976 (- 3)	12/23/79
10,000	20 ^a -B	1	10.0	8.471 (-15)	12/23/79
10,000	20 ^a -B	2	10.0	9.545 (- 5)	12/23/79
1000	30 ^a -T	1	1.0	1.062 (+ 6)	12/23/79
1000	30 ^a -T	2	1.0	0.890 (-11)	12/23/79
1000	30 ^a -M	1	1.0	0.997 (- 0)	12/23/79
1000	30 ^a -M	2	1.0	1.234 (+23)	12/23/79
1000	30 ^a -B	1	1.0	1.019 (+ 2)	12/23/79
1000	30 ^a -B	2	1.0	0.997 (- 0)	12/23/79
5000	30 ^a -T	1	5.0	5.395 (+ 8)	12/29/79
5000	30 ^a -T	2	5.0	4.745 (- 5)	12/29/79
5000	30 ^a -M	1	5.0	5.150 (+ 3)	12/29/79
5000	30 ^a -M	2	5.0	5.150 (+ 3)	12/29/79
5000	30 ^a -B	1	5.0	4.990 (- 0)	12/29/79
5000	30 ^a -B	2	5.0	4.255 (-15)	12/29/79
10,000	30 ^a -T	1	10.0	9.810 (- 2)	12/29/79
10,000	30 ^a -T	2	10.0	9.980 (- 0)	12/29/79
10,000	30 ^a -M	1	10.0	9.980 (- 0)	12/29/79
10,000	30 ^a -M	2	10.0	9.305 (- 7)	12/29/79
10,000	30 ^a -B	1	10.0	9.810 (- 2)	12/29/79
10,000	30 ^a -B	2	10.0	9.490 (- 5)	12/29/79

^aMixing time in minutes

T - Top

M - Middle

B - Bottom

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TABLE IA. Homogeneity of Test Article/Feed Mixtures After Various Mixing Intervals

Dosage Level (ppm)	Sample Position	% of Target Test Article Concentration Found ¹		
		10	20	30
1,000	Top	77	71	98
	Middle	71	98	112
	Bottom	72	82	101
5,000	Top	68	85	101
	Middle	81	99	103
	Bottom	70	109	92
10,000	Top	60	94	99
	Middle	55	90	96
	Bottom	104	90	97

¹Each result is the average of duplicate analyses

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APPENDIX IV
Stability

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STUDY TITLE: 13-Week Dietary Toxicity Study in Rats

Summary of Prepared Test Material Analyses

Study Week Stability

Preparation Date 12/7/79

Sampling Date 12/14/79

NA - Not Applicable

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APPENDIX V
Periodic Analysis

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STUDY TITLE: 13-Week Dietary Toxicity Study in Rats

Summary of Prepared Test Material Analyses

Study Week 1

Preparation Date 12/17/79

Sampling Date 12/17/79

"O" <70 ppm
NA - Not Applicable

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134

STUDY TITLE: 13-Week Dietary Toxicity Study in Rats

Summary of Prepared Test Material Analyses

Study Week 2

Preparation Date 12/24/79

Sampling Date 12/24/99

$\delta_{D^2S} < 70$ ppm

NA = Not Applicable

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8753
135

STUDY TITLE: 13-Week Dietary Toxicity Study in Rats

Summary of Prepared Test Material Analyses

Study Weak 3

Preparation Date 12/31/79

Sampling Date 12/31/79

^a"Q" <55 ppm
NA - Not Applicable

63-63

445

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0 754

STUDY TITLE: 13-Week Dietary Toxicity Study in Rats

Summary of Prepared Test Material Analyses

Study Week 4

Preparation Date 1/7/80

Sampling Date 1/7/80

Aug 1995 20pm

NA = Not Applicable

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0 755

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STUDY TITLE: 13-Week Dietary Toxicity Study in Rats

Summary of Prepared Test Material Analyses

Study Week 8

Preparation Date 2/4/80

Sampling Date 2/4/80

$\delta^{13}\text{C} < -55$ ppm

NA - Not Applicable

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447

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8-756

139

STUDY TITLE: 13-Week Dietary Toxicity Study in Rats

Summary of Prepared Test Material Analyses

Study Week 13

Preparation Date 3/10/80

Sampling Date 3/10/80

^a"O" <36 ppm
NA - Not Applicable

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TABLE 2A. Results of Prepared Test Material Analysis

Dosage Level (ppm)	% of Claimed Test Article Concentration Found ¹				Mean Study Weeks 1-13
	1	2	3	4	
1,000	100	82	77	82	84
5,000	84	81	108	105	101
10,000	92	79	80	83	89
					73

¹Average of duplicate assays

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